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No.

In the Supreme Court of the United States

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND MICHAEL O. LEAVITT, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY PETITIONERS

v.

TENNESSEE VALLEY AUTHORITY, ET AL.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE ELEVENTH CIRCUIT

APPENDIX TO THE PETITION FOR A WRIT OF CERTIORARI

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APPENDIX A

UNITED STATES COURT OF APPEALS
FOR THE ELEVENTH CIRCUIT

Nos. 00-15936, 00-16234, 00-16235 and 00-16236

TENNESSEE VALLEY AUTHORITY, PETITIONER

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS

ALABAMA POWER COMPANY, PETITIONER

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS

TENNESSEE VALLEY PUBLIC POWER ASSOCIATION, MEMPHIS LIGHT, GAS & WATER DIVISION, ET AL., PETITIONERS

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS

DUKE ENERGY CORPORATION, PETITIONER

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS

June 24, 2003

PETITIONS FOR REVIEW OF A FINAL ORDER OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Before: TJOFLAT, BARKETT and WILSON, Circuit Judges.

TJOFLAT, Circuit Judge:

The Environmental Protection Agency ("EPA") concluded that the Tennessee Valley Authority ("TVA") violated the Clean Air Act ("CAA")[1] when it undertook fourteen rehabilitation projects at nine coal-fired electric power plants without permits. The EPA then issued an administrative compliance order ("ACO"), which required that TVA undertake several costly and burdensome compliance initiatives. TVA contended that the EPA had an incorrect understanding of the law and facts, and it therefore refused to comply with the terms of the ACO. Believing that TVA could not be sued in federal court,[2] the EPA created a scheme in which the Environmental Appeals Board ("EAB") was delegated the task of "reconsidering" the ACO by informally adjudicating the issue of liability. After the EAB decided that TVA did, in fact, violate the CAA

[1] The Clean Air Act is codified at 42 U.S.C. §§ 7401-7671q.

[2] The EPA concedes that it normally must prove a CAA violation in a federal district court if a party disputes an ACO: "In most instances if a party disputes . . . the order, EPA can choose to bring a judicial enforcement action." Second Brief of Respondents at 9.

when it undertook the rehabilitation projects without permits, TVA filed a petition for review in this court, asking us to set aside the EAB Order as unlawful and the product of "arbitrary and capricious" decision-making pursuant to the Administrative Procedure Act's ("APA") judicial review provision, 5 U.S.C. § 706(2)(A).

We hold that we lack jurisdiction to review the ACO because it does not constitute "final" agency action. Although the CAA empowers the EPA Administrator to issue ACOs that have the status of law,[3] we believe that the statutory scheme is unconstitutional to the extent that severe civil and criminal penalties can be imposed for noncompliance with the terms of an ACO. Accordingly, ACOs are legally inconsequential and do not constitute final agency action. We therefore decline to assert jurisdiction over TVA's petition for review pursuant to 42 U.S.C. § 7607(b)(1).[4] The EPA must prove the existence of a CAA violation in district court; until then, TVA is free to ignore the ACO without risking the imposition of penalties for noncompliance with its terms.

This opinion consists of six parts. In part I, we describe the CAA's enforcement scheme. An important component of this discussion is the following observation: Congress clearly intended that ACOs be issued

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[3] When we use the phrase "status of law," we are referring to a legal instrument, such as an injunction, that, if violated, leads to the imposition of civil and/or criminal punishment. Thus, if noncompliance with the terms of an ACO can be the sole basis for the imposition of severe fines and imprisonment, then an ACO has the status of law.

[4] Section 7607(b)(1) provides for appellate review of "any other final action of the Administrator under this chapter."

without any sort of adjudication, and the EPA has always (until now) abided by this obvious interpretation. This part also describes the course of this litigation, detailing the EPA's decision to conduct an adjudication prior to the issuance of the ACO—an adjudication that employed procedural rules that were invented by the EAB and administrative law judge ("ALJ") and applied on an ad hoc basis. Part II provides an overview of the Supreme Court's finality doctrine. This part concludes by focusing the discussion on one essential finality factor: whether the agency's action fixes a legal right or obligation. Although we ultimately believe that the CAA clothes ACOs with the status of law, part III explains why this conclusion is not axiomatic, notwithstanding the plain language of the statute. Several factors that might inform our interpretation of the CAA—agency practice, legislative history, the canon of statutory construction which requires courts to interpret statutes in a way that renders them constitutional, the problem of judicial review, and statutory structure—all point to the conclusion that Congress did not intend that ACOs have the status of law. Part IV explains how the plain language of the CAA leads to the unavoidable conclusion that Congress did, in fact, authorize the issuance of ACOs with the status of law. In this vein, the tension between parts III and IV reveals that the CAA was poorly drafted. Part V explains why the CAA is unconstitutional to the extent that monetary penalties and imprisonment can be imposed merely for noncompliance with an ACO. This part also explains why the statute cannot be saved by a voluntary pre-ACO adjudication. Part VI, the conclusion, makes the following point: since a deprivation of liberty or property cannot stem from mere noncompliance with an ACO, ACOs have no

legal consequence and therefore do not constitute final agency action. Not only is this result constitutionally compelled, it also enables future courts to sidestep the thorny problems presented by part III, such as the fact that ACOs are typically issued without a record and the fact that an EPA adjudication of liability conflicts with other provisions of the statutory scheme.

I. Background

A. The Statutory Scheme

When the EPA finds that a regulated party is engaging in some sort of unlawful activity—such as emitting pollutants in excess of that allowed by EPA regulations or constructing a pollution source without a permit required by a state implementation plan ("SIP")—the EPA has four enforcement options. First, the EPA can request that the Attorney General commence a criminal prosecution. *See* 42 U.S.C. § 7413(a)(3)(D), (c).[5] Second, the EPA can file suit in district court and seek injunctive relief and the imposition of civil fines.[6] See 42 U.S.C. § 7413(a)(1)(C),

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[5] The key statutory provisions that are relevant to this case—section 7413 and section 7477—can be found in the attached appendix.

[6] When the Administrator decides to file a civil action in district court, the decision to file suit need not be based upon the substantial amount of evidence necessary for victory at trial. Rather, the decision to file suit need only be based upon "any information available." *See, e.g.*, 42 U.S.C. § 7413(a)(1)(C). That is, the decision to file suit need only meet something akin to the "probable cause" standard in criminal law or the standard for avoiding sanctions found in Fed. R. Civ.P. 11. It need not be based upon the more rigorous "substantial evidence" requirement of the APA. *See* 5 U.S.C. § 706. The same goes for a decision to refer a potential criminal violation to the Attorney General.

(a)(2)(C), (a)(3)(C), (b). Third, the EPA can, after a formal adjudication of liability consistent with the APA[7] and 40 C.F.R. § 22,[8] assess civil penalties against the violator. *See* 42 U.S.C. § 7413(d). Whenever any of these three enforcement methods is used, the following fact remains true: if the defendant believes that the EPA has based its conclusions upon erroneous facts or an incorrect understanding of the law, the defendant may make legal and factual arguments in an independent forum—one that enables the defendant to utilize a panoply of pre-established procedural rights.

The EPA also has a fourth option: it can issue an ACO directing the regulated party to comply with various requirements. *See* 42 U.S.C. § 7413(a)(1)(A), (a)(2)(A), (a)(3)(B), (a)(4). ACOs can be issued so long as the following requirements are met: (a) they must be based upon "any information available to the Administrator"; (b) they must be issued thirty days after the issuance of a Notice of Violation; and (c) the regulated party must be given an "opportunity to confer" with the Administrator. *See* 42 U.S.C. § 7413(a)(1), (4).

The problem with ACOs stems from their injunction-like legal status coupled with the fact that they are issued without an adjudication or meaningful judicial

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[7] *See* 5 U.S.C. §§ 554, 555.

[8] 40 C.F.R. § 22 codifies the EPA's "Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties and the Revocation/Termination or Suspension of Permits." Part 22 contains an exhaustive set of procedures governing formal adjudication, including the following: the filing of a complaint, *see* § 22.14; motion practice, *see* § 22.16; alternative dispute resolution, *see* § 22.18; discovery, *see* § 22.19; the admission of evidence, *see* § 22.22; findings of fact and conclusions of law by an ALJ, *see* § 22.21; and appellate review by the EAB, *see* § 22.29.

review. First, ACOs are issued without any sort of adjudication that a party has violated the CAA. Like the decision to pursue a civil enforcement action in district court and the decision to refer a potential criminal violation to the Attorney General, the decision to issue an ACO is made "on the basis of any information available to the Administrator." 42 U.S.C. § 7413(a)(1). That is, the Administrator need only have a staff report, newspaper clipping, anonymous phone tip, or anything else that would constitute "any information." The standard is less rigorous than the probable cause standard required for the issuance of search warrants; certainly no pre-ACO adjudication that a party has violated the CAA (such as by modifying a pollution source in violation of an SIP) is contemplated. This observation is confirmed not only by the language of the statute, but also by agency practice. ACOs are rarely, if ever, issued after an agency adjudication.[9] Finally, section 7413(d) explicitly requires an adjudication before the EPA can assess civil penalties, underscoring the fact that when Congress wants the EPA to conduct an adjudication, it knows how to effectuate that result. In sum, the statute's language and structure, in addition to agency practice, make clear that ACOs are issued without any adjudication.

A second aspect of ACOs is that they have the status of law. The other three enforcement options dovetail with the ACO provisions, making a violation of an ACO

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[9] In this case, for example, *six* ACOs were issued by the EPA without any adjudication whatsoever. The seventh ACO, unlike the first six, was issued after the EPA undertook a proceeding that resembles an adjudication—a step that the EPA concedes was "exceedingly unusual." *See* First Brief of Respondent at 41.

a freestanding violation. That is, a violation of an ACO can itself serve as the basis for the imposition of extensive civil fines or imprisonment. Section 7413(b), for example, provides that a civil action can be commenced not only when a person has violated an SIP or EPA regulation, but also after a party fails to comply with an "order." Similarly, section 7413(c)(1) provides that "[a]ny person who knowingly violates . . . any order under subsection (a) of [42 U.S.C. § 7413] . . . shall, upon conviction, be punished by a fine pursuant to Title 18, or by imprisonment for not to exceed 5 years, or both." Criminal liability can also be predicated upon a violation of an ACO issued pursuant to 42 U.S.C. § 7477. Finally, the EPA can administratively assess civil penalties based upon the violation of any "order" issued by the EPA. *See* 42 U.S.C. § 7413(d). Apparently dissatisfied with the dispensation of justice by the federal courts, Congress empowered the EPA to decide the central question of whether a regulated party has complied with an SIP or EPA regulation. Once the EPA has decided the underlying issue of liability, it can issue an injunction-like order which, upon noncompliance, leads to a host of severe penalties. The following scenarios illustrate the scheme:

> Scenario One: *The EPA Administrator reads a newspaper report stating that Energy Co. has modified a power plant without a permit. The EPA also receives an anonymous phone tip "confirming" the report . Based upon the newspaper's discussion of the precise nature of the modifications, the Administrator believes that the modifications are so extensive that Energy Co. is in violation an SIP. That is, the Administrator finds that there has been*

a violation of an applicable implementation plan based upon "any information available to the Administrator." 42 U.S.C. § 7413(a). The Administrator gives the requisite "Notice of Violation" to Energy Co., and Energy Co. vehemently disagrees with the EPA. It believes that the EPA has based its finding upon an erroneous view of the law and facts, and so it does nothing in response to the Notice of Violation. After 30 days, the Administrator issues a highly detailed administrative compliance order pursuant to 42 U.S.C. § 7413(a)(1). The Administrator provides Energy Co. with an "opportunity to confer," see § 7413(a)(4), hoping that she can settle the matter with Energy Co. and thereby avoid the difficult and costly task of proving a violation in court. The Administrator revises the ACO several times, but to no avail; Energy Co. continues to believe that the Administrator's view of the law and facts is wrong. After conducting an investigation so that it can make out a complaint against Energy Co., the EPA takes the following course of action: first, the EPA seeks to administratively assess civil penalties against Energy Co. pursuant to section 7413(c); second, the agency seeks an injunction in district court pursuant to section 7413(b); third, because the EPA believes that Energy Co. is a "knowing violator" of the SIP under section 7413(d), it asks the Attorney General to bring a criminal action against Energy Co. In all three forums—the civil suit seeking an injunction, the intra-agency proceeding seeking civil penalties, and the criminal prosecution seeking imprisonment—Energy Co. is allowed to contest EPA's view of the facts and law. In each case, the original tribunal or a reviewing court might

decide that the EPA has failed to prove that Energy Co. has violated an SIP or EPA regulation.

Scenario Two: *Just like Scenario One, the EPA Administrator reads a newspaper report stating that Energy Co. has been undertaking various modifications to a power plant without a permit. She also receives an anonymous phone tip "confirming" the report. Based on the newspaper's discussion of the precise nature of the modifications, the Administrator believes that the modifications are so extensive that Energy Co. is in violation of an SIP. That is, the Administrator finds that there has been a violation of an applicable implementation plan based upon "any information available to the Administrator." 42 U.S.C. § 7413(a). The Administrator then gives a "Notice of Violation" to Energy Co. Energy Co., believing that the EPA has based its finding upon an erroneous view of the law and facts, does nothing in response to the Notice of Violation. The Administrator responds by issuing a highly detailed administrative compliance order pursuant to 42 U.S.C. § 7413(a)(1).*

At this point, the story begins to change dramatically from Scenario One. The Administrator provides Energy Co. with an "opportunity to confer," see 42 § 7413(a)(4), although the "opportunity" is really no opportunity at all because the Administrator has no intention of changing the ACO. After a few weeks, Energy Co. still has not complied with the terms of the ACO, because Energy Co. continues to believe that the Administrator has an incorrect understanding of the law

and facts. The EPA responds by filing an action for the assessment of civil fines pursuant to section 7413(d), in addition to referring the matter to the Attorney General for prosecution. The only issue in each proceeding is whether Energy Co. did, in fact, violate the terms of the ACO. Energy Co. does not have a chance to contend that the EPA has an incorrect view of the facts and law; these issues are irrelevant. Each proceeding involves a brief hearing, with the EPA proffering irrefutable evidence that (a) an ACO was properly issued by the Administrator based upon "any information" available to her (i.e., the newspaper article and anonymous phone tip) and (b) Energy Co. refused to comply with the ACO. Energy Co. is subsequently fined $25,000 per day, and the CEO of Energy Co. is hauled off to prison for five years.

In short, because an ACO can be issued "on the basis of any information available" to the Administrator, and because noncompliance with an ACO automatically triggers civil and criminal penalties, Energy Co. and its corporate officers never get an opportunity to argue, before a neutral tribunal, that the modifications in question do not violate an SIP. The EPA is the ultimate arbiter of guilt or innocence, and the courts are relegated to a forum that conducts a proceeding, akin to a show-cause hearing, on the issue of whether an EPA order has been flouted. As will be discussed *infra*, this scheme violates the Due Process Clause and the separation-of-powers principle. Our task for the moment is merely to describe how the scheme works.

B. This Litigation

The Tennessee Valley Authority ("TVA"), an agency of the United States, was established pursuant to the Tennessee Valley Authority Act of 1933, 16 U.S.C. §§ 831-831ee. One of its primary responsibilities is to provide electric power at reasonable rates. 16 U.S.C. § 831n-4(h). To satisfy the statutory directive, TVA owns and operates eleven coal-fired electric power plants,[10] most of which were built between the 1950s and the 1970s.

Beginning in the late 1970s, TVA began to plan a series of projects involving the replacement of various boiler components[11] at its coal-fired plants, which were carried out between 1982 and 1996. In 1999, the EPA arrived at the conclusion that these projects did not constitute "routine maintenance" as provided for in the exception to the "physical change" component of the "modification" definition set forth in the regulations promulgated under the CAA.[12] Accordingly, the EPA

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[10] TVA also operates twenty-nine hydroelectric plants, four gas turbine plants, and one pumped-storage facility.

[11] The boiler in a coal-fired plant typically consists of miles of tubing and piping and has various components. Some of those components are known as horizontal reheaters, economizers, superheaters, furnaces, waterwalls, and cyclones. The boiler generally performs the following two functions: (1) it combusts coal and then releases it as heat and light; and (2) it converts heat energy into steam energy.

[12] The CAA provides a reprieve for existing facilities, allowing them to avoid the expense of adding state-of-the-art pollution controls. However, once plants are "modified" in a manner that significantly increases emissions, the permitting requirements apply and controls must be added. *See* 42 U.S.C. § 7411(a)(4) (defining "modification" as "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously

believed that the projects triggered New Source Review ("NSR"),[13] New Source Performance Standards ("NSPS"),[14] and the requirements of various SIPs.

On November 3, 1999, the EPA issued its first ACO,[15] requiring TVA to identify any modifications undertaken without permits, apply for the permits, and enter into a compliance agreement with the EPA. Between January and May of 2000, TVA and the EPA held a series of negotiations, leading to six separate amendments to the ACO. After the EPA issued its sixth amended ACO, TVA held firm to its view of the facts

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emitted."). EPA regulations provide, however, that "[a] physical change in the method of operation shall not include: . . . Routine maintenance, repair, and replacement." 40 C.F.R. § 52.21(b)(2)(iii)(*a*).

[13] In 1977, Congress enacted the NSR program which required states to designate whether discrete areas meet the National Ambient Air Quality Standards ("NAAQS") for each listed pollutant and establish pre- construction permitting requirements for new and modified sources. For areas that meet the NAAQS, permits must, among other things, require installation of the best available control technology for each regulated pollutant. 42 U.S.C. § 7475(a). New and modified sources in "nonattainment areas" (i.e., areas that fail to meet NAAQS), must, prior to construction, obtain a permit which, among other things, requires the source to achieve the lowest achievable emission rate and to provide enforceable emissions offsets. The EPA has promulgated regulations, *see* 40 C.F.R. § 51.165, governing the approval of state nonattainment NSR programs.

[14] The NSPS program requires that the EPA issue federal performance standards, based upon the "best demonstrated technology," for categories of new stationary sources that (a) cause air pollution and (b) may reasonably be anticipated to endanger public health or welfare. 42 U.S.C. § 7411(b)(1)(B); 40 C.F.R. § 60.

[15] TVA petitioned this court for review of the November 3, 1999 ACO on May 4, 2000.

and law—namely, that (a) the "modifications" at issue constituted "routine maintenance" and a permit was therefore not required;[16] (b) no increase in emissions could be traced to the modifications; and (c) the EPA suddenly changed its definition of "modification" to encompass projects undertaken decades ago, thereby violating the fair notice concepts found in the Constitution's Due Process Clause and administrative common law.[17] On May 4, 2000, the EPA informed TVA by letter that it was going to "reconsider" the ACO and directed TVA to comply with the ACO in the meantime. TVA petitioned this court for review of EPA's "notice of reconsideration" on May 12, 2000.

Rather than issuing a seventh amended ACO after staff deliberation, the EPA took a step that it describes as "exceedingly unusual":[18] it decided to "reconsider" the ACO by "adjudicating" the issue of whether TVA had violated the CAA when it undertook several plant modifications without a permit.[19] The Administrator

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[16] .Much like replacing a car battery, TVA contends that the alleged "modifications" were acts of "routine maintenance" for the following two reasons: (1) without the modifications the power plants could not operate for their entire useful lives, and (2) the modifications comprised only a tiny fraction of the total capital outlay necessary to build and maintain each plant.

[17] For a thorough analysis of TVA's fair notice claim, see Note, Jason Nichols, *"Sorry! What the Regulation Really Means is. . . .": Administrative Agencies' Ability to Alter an Existing Regulatory Landscape Through Reinterpretation of Rules*, 80 Tex. L.Rev. 951 (2002).

[18] *See* First Brief of Respondent at 41.

[19] Rather than examining whether the ACO was validly issued (i.e., whether the ACO was issued "on the basis of any information"), the EPA sought to examine the issue of liability (i.e., whether TVA committed a violation of the CAA). "Neither the

delegated the task of "reconsidering" the ACO to the EAB, which she was entitled to do by law. *See* 40 C.F.R. § 1.25(e) (giving the EAB authority to exercise any authority delegated to it, including the authority to "serve as the final decisionmaker, as the Administrator

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CAA nor EPA's regulations provides a specific process to . . . adjudicate an administrative order like the ACO," the EPA boldly points out. *See* Second Brief of Respondents at 9. So why did the EPA decide to undertake an adjudication notwithstanding its observation that the statute does not authorize one? The EPA gives this answer: "In most instances if a recipient disputes or defies the [ACO], the EPA can chose to bring a judicial enforcement action. That option was not available here because TVA is a sister federal agency, whom EPA cannot sue in court. Therefore, to address this unique circumstance, on May 4, 2000, then-EPA Administrator Carol Browner delegated to the EAB her authority to craft an appropriate reconsideration procedure, tailored to these unusual circumstances in a manner consistent with analogous agency practice, and further directed the EAB to issue a final decision by September 25, 2000." *See* Second Brief of Respondents at 9. The EPA's answer begs the question: Why didn't the EPA stop with the sixth amended ACO? Why did it feel obliged to issue a seventh ACO after an "adjudication" that TVA violated the CAA when it undertook various modifications without a permit? One possibility is that the EPA felt that Executive Order 12146 would require the Attorney General to ultimately decide the dispute, and the Attorney General could perhaps make a better decision based upon some sort of record. TVA believes that the EPA's motive was more sinister, claiming that the agency simply wanted to spur compliance with its demands while simultaneously thwarting judicial review by undertaking a proceeding that would enable the EPA to allege that since its decision making process had not been completed, any outstanding ACO was not final. In any event, our first panel decision rejected EPA's contention that TVA could not be a defendant in a judicial enforcement action. *See Tenn. Valley Auth. v. EPA*, 278 F.3d 1184 (11th Cir. 2002). Faced with this holding, one must wonder why the EPA did not thereafter treat this case as a typical dispute by bringing an enforcement action in district court.

deems appropriate"). Thus, the EAB, enlisted to serve as a proxy for the Administrator, possessed the Administrator's authority to issue the EPA's "reconsidered" ACO.

The EAB crafted a reconsideration procedure which, to say the least, lacked the virtues of most agency adjudications.[20] *First*, the ALJ was instructed by the EAB not to make any findings of facts and conclusions of law. Adjudications typically have statutory protections guaranteeing the ALJ's independence from the heads of the agencies in which they serve. *See* 5 U.S.C. § 7521. The EAB, by contrast, is a *delegatee* of the Administrator and is located within the Administrator's Office. *See* 57 Fed.Reg. 5320, 5320-22 (Mar. 1, 1992). *Second*, discovery was effectively unavailable: TVA was not entitled to any compulsory process and therefore had to utilize only those documents that the EPA voluntarily divulged; TVA was not allowed to take several depositions; and the EPA made available its hefty privilege log only after the hearing concluded. *Third*, the testimony that was allowed at the hearing was again "limited" at the behest of the Administrator. *Fourth*, the proceeding was rushed, giving TVA little time to prepare its defense. TVA was given less than eight weeks of advance notice of the hearing, and the basis of EPA's case was not divulged until three weeks before the hearing. The reasoning behind EPA's

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[20] This assertion comes with a caveat: the EAB proceeding was unfair *to the extent that it embodies an adjudication that TVA committed a violation of the CAA*. However, ACOs can be based upon "any information available"—a considerably broad standard that requires much less than an adjudication of liability. Viewed as a search for "any information," the procedural protections granted by the EAB were certainly more than adequate.

finding that TVA's projects caused emissions increases were not divulged *at all* prior to the hearing. Moreover, TVA was entitled to no more than two weeks to identify witnesses in a regulatory matter spanning over twenty years. TVA was not granted any time extensions to conduct discovery and prepare its case. *Fifth*, the EAB and ALJ manufactured the procedures they employed on the fly, entirely ignoring the concept of the rule of law. Although the EAB said that the EPA's Consolidated Rules of Practice ("CRP"), 40 C.F.R. § 22, could serve as an adjudicatory model, the rules were only to be used for "guidance." *See, e.g., In re Tenn. Valley Auth.*, CAA Docket No. 00- 6, at 20 n. 11 (Sept. 15, 2000) (hereinafter "EAB Order"). The EAB admonished TVA that the proceeding "is not a formal [40 C.F.R. § 22] proceeding, that TVA is not entitled to discovery, and that the schedule in this proceeding has granted TVA significantly greater discovery and hearing rights than required by CAA § 133(a), 42 U.S.C. § 7413(a)."[21] EAB Order, at 17. The rules were applied on a purely ad hoc basis. For example, under 40 C.F.R. § 22.27(a), the "Presiding Officer" (e.g., an ALJ) is required to render an "initial decision." The ALJ in this case had no such authority. The ALJ also refused to apply CRP in upholding EPA's objections to TVA's document requests. Sometimes, the ALJ likened the sixth amended ACO to a "complaint" so as to permit the EPA to supplement the record; other times, the ALJ referred to the ACO as a mere "compliance order" and used this categorization to bar TVA's discovery. Describing the procedural framework being employed,

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[21] The EAB's position was, of course, accurate. Section 7413 does not create *any* procedural rights precisely because an adjudication is not contemplated by that statute.

the ALJ said: "There's no question about it. This is an invented . . . ad hoc procedure. . . . It's not described in any rule or regulation or statute . . . and that's the only way to look at it. There is no precedent." Transcript of June 7, 2000 Pre-Hearing Conference at 74-75, R6-99.

The EAB ultimately "affirmed" most of the sixth amended ACO on September 15, 2000. Both during the EAB proceeding and after it concluded, the EPA operated under the mistaken assumption that an ACO issued after an ad hoc "adjudication" could somehow possess a different legal status than an unadjudicated ACO. The EAB, for example, consistently called the product of the EAB decision a "Final Order" while calling all prior ACOs "compliance orders." The EAB also said that "since the Administrator has directed us to reconsider the Compliance Order, we will characterize the Compliance Order's findings as *allegations* that must be proven in order to prevail on reconsideration, and the actions required by the Compliance Order as *requests* for relief." EAB Order, at 5-6. The EAB thus characterized the sixth amended ACO as something akin to a complaint, thereby implying that its final decision, based upon a proceeding that purported to be an agency adjudication, was a different animal. The EPA's brief continues to support the fanciful view that the adjudication conducted by the ALJ and EAB somehow magically transformed the ACO into something else. By way of background (which will be discussed *infra*), the EPA has consistently contended that pre-enforcement review of ACOs is unavailable because ACOs allegedly trigger no legal consequences upon noncompliance with their terms. But an *adjudicated* ACO, the EPA argues, is somehow

a different creature: "In stark contrast to the ACO, the EAB Final Order constituted a full and complete adjudication by the EAB of the legal and factual issues. Accordingly, the EPA does not contend that . . . this is the kind of action as to which Congress intended to bar pre-enforcement review." *See* Second Brief of Respondents, at 1 n. 4.

On November 13, 2000, TVA petitioned this court for review of the EAB Order pursuant to 42 U.S.C. § 7607(b), which provides for appellate review of any "final agency action of the Administrator." We bifurcated our review of TVA's petitions for review, dealing first with several threshold issues in our opinion of January 8, 2002. *See Tenn. Valley Auth. v. EPA*, 278 F.3d 1184 (11th Cir. 2002). We held that the petitions for review of the pre-adjudication ACOs were moot because the EAB Order rendered the first ACOs "of no force and effect." *Id.* at 1191. We also held that TVA possessed independent litigating authority; that the dispute presented a justiciable case or controversy; that Executive Orders 12146 and 12088 did not preclude jurisdiction;[22] and that various petitioners had standing. *Id.* at 1191-1209. Finally, we held that the EAB Order was a reviewable final order, *id.* at 1198-99, asserting in a footnote that "we are not persuaded that a compliance order may not be reviewed prior to an enforcement action." *Id.* at 1198 n. 21. After further reflection, we no longer believe that the EAB Order constitutes final agency action, and we therefore withdraw the part D of

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[22] The EPA contended that Executive Order 12088 requires that this dispute be resolved by the Director of the Office of Management and Budget. The EPA also maintained that Executive Order 12146 requires that the Attorney General resolve this inter-agency dispute.

our previous opinion to the extent that it expresses a contrary view.

II. Discussion of Finality, Part One: The Law of Finality and Why it Matters

A. Appellate Review Provision: Why Finality Matters for Jurisdiction

The CAA provides that judicial review of any final EPA action is available "in the United States Court of Appeals for the appropriate circuit." 42 U.S.C. § 7607(b); *Harrison v. PPG Indus., Inc.*, 446 U.S. 578, 100 S. Ct. 1889, 64 L. Ed. 2d 525 (1980).[23] Thus, this court has jurisdiction only if the EPA's action constitutes final agency action.

B. Finality Doctrine: An Overview

The Supreme Court has established five factors for determining finality: (1) whether the agency action constitutes the agency's definitive position; (2) whether the action has the status of law or affects the legal rights and obligations of the parties; (3) whether the action will have an immediate impact on the daily operations of the regulated party; (4) whether pure

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[23] The *Harrison* Court had no occasion to address whether the EPA action at issue in that case was truly final agency action. Both parties agreed that the agency decision was final. *See Harrison*, 446 U.S. at 586, 100 S. Ct. at 1894. The only question before the Court was whether *all* final EPA actions were appealable. Without an adversarial presentation of the issue, it is not surprising that the Supreme Court failed to address the legal consequences of the agency action at issue—a factor that the Court held in *Bennett v. Spear*, 520 U.S. 154, 117 S. Ct. 1154, 137 L. Ed. 2d 281 (1997), to be a mandatory finality requirement. *See* part II.B, *infra*.

questions of law are involved; and (5) whether pre-enforcement review will be efficient. *See FTC v. Standard Oil of Calif.*, 449 U.S. 232, 239-43, 101 S. Ct., 488, 493-95, 66 L. Ed. 2d 416 (1980). The second prong is especially important in this case. In *Standard Oil*, the Court distinguished the regulations at issue in *Abbott Labs. v. Gardner*, 387 U.S. 136, 149, 87 S. Ct. 1507, 1516, 18 L. Ed. 2d 681 (1967), on the ground that the regulations had a "direct and immediate . . . effect on the day-to-day business" of the complaining parties because they had " 'the status of law.' " *Standard Oil*, 449 U.S. at 239-40, 101 S. Ct. at 493. In this vein, the Court rejected the petitioner's argument that the FTC's actions had legal significance: "Socal does not contend that the issuance of the complaint had any such legal or practical effect, except to impose upon Socal the burden of responding to charges made upon it. Although this burden is certainly substantial, it is different in kind and legal effect from the burdens attending what heretofore has been considered to be final agency action." *Id.* at 242, 101 S. Ct. at 494. Similarly, in *Bennett v. Spear*, 520 U.S. 154, 117 S. Ct. 1154, 137 L. Ed. 2d 281 (1997), which was recently affirmed in *Whitman v. American Trucking Ass'ns, Inc.*, 531 U.S. 457, 121 S. Ct. 903, 149 L. Ed. 2d 1 (2001), the Court explained as follows:

> As a general matter, two conditions must be satisfied for agency action to be "final": First, the action must mark the "consummation" of the agency's decision making process—it must not be of a merely tentative or interlocutory nature. And second, the action must be one by which "rights or obligations have been determined," or from which "legal consequences will flow."

Bennett, 520 U.S. at 177-78, 117 S. Ct. at 1168 (citation omitted). The second *Standard Oil* prong, then, is not merely thrown into a totality-of-the-factors balancing test; it is mandatory. The second *Bennett* factor—whether the agency action is one in which "rights or obligations have been determined" or from which "legal consequences will flow"—is central to our position that ACOs are not final.[24]

III. Discussion of Finality, Part Two: Why Congress May Not Have Empowered the EPA to Issue ACOs with the Status of Law

It is entirely possible that Congress wanted the EPA to issue inconsequential, complaint-like instruments rather than ACOs with the status of law. That is, one can make a solid argument that Congress never clothed ACOs with the status of law, and that Congress believed that ACOs would not be subject to judicial review.

A. Avoiding an Unconstitutional Interpretation

One reason that a court might interpret the CAA in a way that diminishes the legal significance of ACOs is the fact that the statutory scheme dictated by the plain language of the statute is constitutionally repulsive. As part V.B, *infra*, explains, the "status of law" interpretation renders the statute unconstitutional, and courts are loath to infer a congressional intention to enact unconstitutional legislation. *See Pub. Citizen v.*

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[24] Several courts have held that ACOs are not final for reasons that we ultimately find unconvincing. *See infra* part V.A. These courts, which contend that ACOs are merely complaint-like documents that do not fix legal obligations, similarly focus on the second prong of the *Bennett* test.

United States Dep't of Justice, 491 U.S. 440, 465-66, 109 S. Ct. 2558, 2572-75, 105 L. Ed. 2d 377 (1989).

B. Statutory Structure and the Problem of Superfluous Provisions

To ascertain the true meaning of a statute, courts are often forced to delve into the structure of a statute and the context in which different provisions are written. *See, e.g., United States v. Tinoco*, 304 F.3d 1088, 1105 (11th Cir. 2002). Using this methodology, it becomes apparent that an interpretation that would give ACOs the status of law renders several statutory provisions useless or absurd.

1. 42 U.S.C. § 7603

Perhaps most telling is 42 U.S.C. § 7603, which gives the EPA special "emergency powers." When a pollution source presents an "imminent and substantial endangerment to public health or welfare, or the environment," the EPA may bring suit for appropriate relief. If it is "not practicable to assure prompt protection of public health or welfare" by recourse to a judicial forum, then the EPA may issue an "order" on its own initiative. This order "remains in effect" for, at most, sixty days. To secure a permanent injunction, the EPA must sue in district court. If the order is flouted by the alleged violator, the full panoply of penalties can be imposed, including imprisonment pursuant to 42 U.S.C. § 7413(c)(1).

It is clear from the text of section 7603 that Congress enabled the EPA to issue orders with the status of law, but only in an extremely narrow context. There must be an emergency rising to the point of an "imminent and substantial endangerment." Moreover, the EPA

order attains an injunction-like status only for an extremely short time period; any extension must be made by a federal court based upon proof that the defendant has caused extremely harmful pollution. And in the event of an "imminent and substantial endangerment," the EPA does not have unfettered discretion to enter a short-term, injunction-like order. The agency must first resort to a judicial forum; only if that option proves to be impracticable is the EPA justified in issuing such an order. Finally, the EPA is forced to "consult with appropriate State and local authorities and attempt to confirm the accuracy of the information on which the action proposed to be taken is based."

Congress thus authorized the issuance of EPA orders with the status of law, but only in an extremely narrow setting (public emergency), as a last resort (if suing in federal court is impracticable), for a very limited time (sixty days), and after the EPA confirms its information with state and local authorities. Why would Congress cabin EPA orders in this way if the EPA can always issue an identical order (i.e., an ACO) pursuant to 42 U.S.C. § 7413? After all, section 7413 ACOs are of an infinite duration, and they can be issued without going to court—even if recourse to a judicial forum is not "impracticable." Moreover, section 7413 ACOs can be issued "on the basis of any information" that a violation has been committed; there is no need to worry about whether the violation constitutes a rare public emergency, and there is no need to consult sate and local authorities. In sum, section 7603 evidences a congressional intent to permit the EPA to issue orders with the force of law, but only so long as rigorous requirements are met. Section 7413 apparently erases all of those requirements.

2. 42 U.S.C. § 7413

Section 7413(c)(1) states that "any person who knowingly violates any . . . order under [42 U.S.C. § 7413(a)] . . . shall, upon conviction, be punished by a fine pursuant to Title 18, or by imprisonment for not to exceed 5 years, or both." When read literally, this provision mandates that a knowing violation of the terms of an ACO can lead to imprisonment. The question for the district court is not whether the defendant has, in fact, polluted in violation of an SIP. Rather, the issues before the court are simply (a) whether an ACO has been issued and (b) whether the defendant has complied with its terms.[25]

This interpretation is, to say the least, bizarre when one reads the rest of the statute. The other criminal provisions require the Government to prove that a defendant has negligently or knowingly released hazardous pollutants. *See* 42 U.S.C. § 7413(c)(4), (5). Why would Congress bother with requiring the use of the full panoply of procedural rights found in the Federal Rules of Criminal Procedure when the EPA could simply issue an ACO based upon "any information," and, upon noncompliance with the ACO, obtain a conviction? For that matter, the EPA has a strong incentive to avoid proving a violation of an EPA regulation or SIP in *any* forum—including a civil proceeding in district court or an administrative proceeding before an ALJ. If the EPA issues an ACO, it can always avoid the arduous task of proving the

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[25] In most cases in which the regulated party believes that the EPA has an incorrect view of the law or facts, the party will freely admit that it failed to comply with the terms of an ACO.

violation in court. The ACO provision appears to be a loophole of the highest order.

Section 7413 also provides that ACOs cannot take effect until the regulated party has had an "opportunity to confer" with the EPA. *See* 42 U.S.C. § 7413(a)(4). Why did Congress include this language? If ACOs do not have the status of law, then this provision makes sense: ACOs are merely complaint-like devices that are used in an effort to avoid recourse to litigation. They are, in short, the beginning of the bargaining process. *See Lloyd A. Fry Roofing Co. v. EPA*, 554 F.2d 885, 890-91 (8th Cir. 1977); *Asbestec Const. Servs., Inc. v. EPA*, 849 F.2d 765, 769 (2d Cir. 1988). But if noncompliance with an ACO can really trigger civil and criminal penalties, then what incentive does the EPA have to "confer" with the regulated party? If the EPA can issue what is, in effect, an injunction, the EPA would rarely feel compelled to compromise.

C. Agency Practice

An agency's interpretation of its enabling legislation often deserves deference. *See Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 104 S. Ct. 2778, 81 L. Ed. 2d 694 (1984). The Supreme Court's decision in *United States v. Mead Corp.*, 533 U.S. 218, 121 S. Ct. 2164, 150 L. Ed. 2d 292 (2001), held that *Chevron* deference is confined to those instances in which the agency renders its interpretation in the course of a rulemaking proceeding or adjudication. Even so, most courts would not completely ignore an agency's interpretation of its organic statutes—even if that interpretation is advanced in the course of litigation rather than a rulemaking or agency adjudication.

The EPA has long taken the litigating position that ACOs lack the status of law and are therefore not subject to pre-enforcement review. In *Solar Turbines Inc. v. Seif*, 879 F.2d 1073 (3d Cir. 1989), for example, the EPA argued that the section 7603 compliance order at issue "merely state[d] EPA's position and [is] best analogized to a complaint." *Id.* at 1079.[26] The EPA took a similar position in this case when it argued that TVA's first petition for review should be dismissed because ACOs have no legal effect and are thus not final agency actions: "The ACO . . . is in the nature of an administrative 'complaint.'" *See* EPA's Motion to Dismiss TVA's Petition for Review of the Nov. 1999 and May 2000 ACOs at 24. *And again:* "Courts have consistently held that, because they are not self-executing and instead compel action only upon enforcement by the EPA, compliance orders issued under environmental statutes such as the Clean Air Act and Clean Water Act are not 'final' under the APA." *Id.* (citations omitted). *And again:* ACOs "do not impose legally binding rights or obligations on the part of their

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[26] The EPA appears to have conveniently forgotten that noncompliance with section 7603 ACOs can lead to the imposition of criminal penalties. *See Solar Turbines*, 879 F.2d at 1080. By contrast, the cover letter that accompanied the ACOs in *Solar Turbines* stated that "[f]ailure to comply with this Order could subject your firm to civil and criminal liabilities pursuant to the Clean Air Act." *Id.* at 1080. *See also* Andrew I. Davis, *Judicial Review of Environmental Compliance Orders*, 24 Envtl. L. 189, 218-21 (1994). Why does the EPA stake out a position in court that differs from the position it takes when it issues an ACO to a regulated party? One possibility is that the EPA likes to have its cake and eat it too—employing the harsh provisions of the CAA when confronting a potentially recalcitrant party, but hesitant to reveal the legal significance of ACOs in court for fear that the very part of the CAA that makes ACOs so effective will be struck down.

recipients" and they are "not considered 'final' for purposes of judicial review. . . . " *Id.* at 26. *And again:* "[A]bsent an enforcement action initiated by the EPA and a subsequent court order, the findings and conclusions in an administrative order have no operative effect." *Id.* at 27.

D. The Problem of Judicial Review

Had Congress wanted ACOs to have the force of law, it surely would have made them subject to judicial review. And had Congress wanted judicial review of ACOs, it surely would have required the EPA to create a record that would facilitate judicial review. But Congress clearly contemplated that ACOs would be issued without a record, and so there would be no way that a reviewing court could review the decision to issue an ACO. The existence of this fact belies the notion that Congress intended to enact a statute in which ACOs have the force of law.

One might respond to this observation by saying that *this case* does, in fact, have a record, and, in any event, courts are always free to remand for the creation of a record. *See Harrison v. PPG Indus., Inc.*, 446 U.S. 578, 100 S. Ct. 1889, 64 L. Ed. 2d 525 (1980). But this retort misses the point, avoiding an argument based upon likely congressional intent and relying upon the particularities of one bizarre case. The point is this: Congress created a statutory scheme in which ACOs are issued without any sort of adjudication, and, accordingly, the EPA has never (until now) undertaken a proceeding that even marginally resembles an adjudication prior to the issuance of an ACO. Given this fact, did Congress really think that a violation of the terms of an unadjudicated ACO (which are 99.9% of

them) could trigger civil and criminal penalties? If Congress intended that ACOs have the force of law, then Congress surely would have facilitated judicial review. Yet in almost every case, the EPA does *not* go about making a record, and the statute clearly countenances this result. The impossibility of judicial review in this setting demonstrates the unlikelihood that Congress ever believed that noncompliance with the terms of an ACO could trigger civil and criminal penalties.

We also wonder how a court of appeals could remand with instructions that the EPA conduct a pre-ACO adjudication since *the statute clearly does not require that the EPA undertake an adjudication prior to the issuance of an ACO?*[27] Perhaps the court is supposed to issue a statement in its remand order that says the following: "Although the statute says that the EPA need not conduct a pre-ACO adjudication, we think that it should do so." A remand with instructions to adjudicate a dispute would, in effect, constitute an amendment to the statute by judicial fiat.[28]

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[27] And what procedural rules would the EPA employ on remand? After all, the EPA is not statutorily required to conduct an adjudication. Perhaps future courts of appeals will attach, as an appendix to their remand orders, a list of judge-made procedures that the EPA ought to adopt so that the reviewing court can have a record sufficient to conduct meaningful appellate review. These procedures would vary from case to case, of course, depending on the circumstances.

[28] Indeed, the absence of a record is ultimately why Judge Becker concluded in *Solar Turbines* that section 7477 orders are not final agency actions. *See* 879 F.2d at 1085 (Becker, J., concurring).

Finally, we ask this question: assuming, *arguendo*, that (a) ACOs have the status of law and (b) a court can make the EPA conduct a pre-ACO adjudication, *what would be the issue for the court of appeals on review of the pre-ACO adjudication?* Throughout this appeal, the litigants have assumed that EPA's adjudication could be overturned if it proves to be "arbitrary [and] capricious or otherwise not in accordance with the law." *See* 5 U.S.C. § 706(2)(A). But ACOs are valid so long as (a) the EPA waits the requisite thirty days after a Notice of Violation is issued; (b) the EPA grants an "opportunity to confer" with the Administrator; and (c) the EPA issues an ACO "on the basis of any information available to the Administrator" that a regulated party has violated the CAA. *See* 42 U.S.C. § 7413(a). The only real inquiry is whether the Administrator possessed "any information"—a standard that is less rigorous than the "probable cause" standard found in the criminal law setting. And it is certainly less rigorous than traditional judicial review of agency adjudications under the APA. Whether the Administrator's facts are too thin to warrant an adjudicated finding that an SIP has, in fact, been violated is irrelevant as far as ACOs are concerned. We therefore take issue with the notion that the courts of appeals are free to remand for an agency adjudication of whether an SIP has been violated when that issue is irrelevant in the ACO context.

E. Legislative History

The legislative history of the CAA, when read in conjunction with several cases that form the backdrop to that history, supports the notion that Congress did not believe that the issuance of an ACO constitutes final agency action. And since ACOs with the status of

law must be final, it seems unlikely that Congress intended that ACOs have the status of law.

Prior to the CAA's enactment in 1970, the bill reported by the Senate Committee on Public Works, S. 4358, 91st Cong. (2d Sess.1970), contained section 116(a)—a provision that directed the Administrator to issue an abatement order to any person in violation of an SIP not being enforced by the state. The Senate measure also contained language that specifically provided for pre-enforcement judicial review of abatement orders. By the time the measure emerged from the Conference Committee, section 113 of the Act contained no language on the subject of pre-enforcement review. Drawing upon this "silent deletion," the Eighth Circuit held that Congress intended to preclude pre-enforcement review of ACOs. *See Lloyd A. Fry Roofing Co. v. EPA*, 554 F.2d 885, 890-91 (8th Cir. 1977).[29] The Eighth Circuit also noted that pre-enforcement judicial review would be "wholly inconsistent with the enforcement mechanism established by Congress" because "[p]re-enforcement review would severely limit the effectiveness of the conference procedure [provided by section 7413(a)(4)] as a means to abate violations of the Act without resort to judicial process." *Id.* The court rejected the interpretation proffered by the regulated party, because that interpretation would allow the EPA to "easily side-step the possibility of pre-enforcement review by filing suit in

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[29] In *Lloyd A. Fry Roofing*, the regulated party sought an injunction that would prohibit the EPA from enforcing a Notice of Violation. Although the procedural posture was different from the case at hand, the court's analysis of the CAA's legislative history and policy of favoring nonjudicial resolution of disputes is instructive.

the district court without prior issuance of an order. . . . " *Id.* at 891. In other words, allowing pre-enforcement judicial review would create an enormous incentive for the EPA to head straight to federal court rather than using the alternative dispute resolution mechanism established by Congress. Why issue an ACO when doing so would enable the regulated party to file a petition for review and delay enforcement as long as possible? The EPA would be better off to hide its cards until it brings an enforcement action in federal court.

Other courts similarly concluded that pre-enforcement review is unavailable under the CAA. The Second Circuit, for example, considered a case highly analogous to the case at hand. *See Asbestec Constr. Servs., Inc. v. EPA*, 849 F.2d 765 (2d Cir. 1988). Looking to the Supreme Court decision in *FTC v. Standard Oil Co. of California*, 449 U.S. 232, 239-43, 101 S. Ct. 488, 493-95, 66 L. Ed. 2d 416 (1980), for guidance, the Second Circuit held that the ACO was not a final agency action. The court conceded that the ACO was a final and definitive statement of the agency's position, but it believed that the other *Standard Oil* factors weighed against finding that the ACO was a final action. *See Asbestec*, 849 F.2d at 768. The court focused first on the second *Standard Oil* factor, which requires the reviewing court to analyze the effect on the petitioner absent review. The Second Circuit rejected Asbestec's claim that it would suffer adverse effects sufficient to deem the agency action final; it was not enough for Asbestec to show that it would be "stigmatized" or suffer "diminished opportunities" absent pre-enforcement review. *Id.* Relying on precedent, the court stated that "[the word] 'effect' in

determining whether an agency's action is final only denotes the imposition of an obligation, the denial of a right, or some other establishment of a legal relationship." *Id.* (citing *Chicago & S. Air Lines, Inc. v. Waterman S.S. Corp.*, 333 U.S. 103, 112-13, 68 S. Ct. 431, 436-37, 92 L. Ed. 568 (1948), and *Abbott Labs. v. Gardner*, 387 U.S. 136, 152-53, 87 S. Ct. 1507, 1517-18, 18 L. Ed. 2d 681 (1967)). The court therefore held that "Asbestec's 'stigma' contention . . . is without merit because neither its duties nor its obligations have been altered by the compliance order." *Id.* at 768-69. The court then turned to the third *Standard Oil* factor and noted that the issues presented for review were not purely legal. Being mostly factual, "reviewing compliance orders would ordinarily place a significant burden on appellate courts." *Id.* at 769. The last *Standard Oil* factor—whether immediate judicial review would foster agency and judicial economy—similarly militated against finding that the compliance order was final. The court asserted that "the EPA must have some degree of free rein to protect the public from [environmental harm]. To introduce the delay of court review of administrative action taken to ameliorate a potential public health hazard would conflict with Congress' aim to 'accelerate . . . the prevention and control of air pollution.'" *Id.* (quoting 42 U.S.C. § 7401(b)(2)). The court thus concluded that "immediate pre-enforcement review of compliance orders . . . serve[s] neither efficiency nor enforcement of the Clean Air Act." *Id.*

The Third Circuit also held that pre-enforcement review of ACOs is not available under the CAA. *See Solar Turbines Inc. v. EPA*, 879 F.2d 1073 (3d Cir. 1989). There, the EPA issued an ACO that "requir[ed]

the immediate cessation of construction and/or operation of the gas turbine facility at Caterpillar Tractor." *Id.* at 1076. The court, approving of the reasoning of the Eighth Circuit and a prior Third Circuit opinion,[30] discussed the policy behind Congress's implicit decision to deny pre-enforcement review:

> A challenge to [an ACO] would intrude on the procedural sequence created by Congress whereby parties receiving notice of noncompliance are first encouraged to resolve their problems with the states and with EPA in an informal, less costly manner. Judicial review becomes appropriate when the EPA, failing efforts at negotiation and compromise, takes steps at enforcement subjecting the facility to consequential penalties.

Id. at 1078.

When the 1990 amendments to the CAA were proposed, the Senate supported a bill with a provision exactly the opposite of the bill it supported in 1970. That is, the Senate proposed that the CAA explicitly provide that "orders issued pursuant to section 113(a) [and] section 167 . . . are not 'final' agency actions within the meaning of section 307(b)(1)." S. Rep. 101-228 (Dec. 20, 1989). The Senate Report explained the policy behind the Senate proposal as one of (a) facilitating prompt EPA enforcement and (b) the promotion of judicial economy:

> Any judicial review of administrative orders may be carried out only at the time the government or another person seeks to enforce such orders. Otherwise, enforcement for violations of the Act could be

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[30] *See West Penn Power Co. v. EPA*, 522 F.2d 302 (3d Cir. 1975).

delayed indefinitely pending judicial review of the Federal courts of appeal. [*Asbestec, Solar Turbines, Union Electric*,[31] and *Lloyd A. Roofing*] emphasize that this clarification comports with the goals of the Act. EPA must possess the ability to proceed expeditiously against violators. Allowing immediate review of an administrative order in a court of appeals would significantly delay enforcement, and could suspend correction of the underlying violation for years. This is particularly true in cases where a district court defers a decision pending a ruling by the court of appeals. Equally undesirable is the prospect that courts at both the district and court of appeals levels might decide to consider the same issue at the same time. In short, delays resulting from the pre-enforcement review of administrative orders not only conflict with the statutory directive that air pollution be prevented in an expeditious fashion, but it also hinders the ability to protect the public from the environmental hazards associated with air pollution.

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This amendment will also promote judicial economy. At present, burdens on the Federal appellate courts are significant. Given the fact that many challenges to administrative orders involved factual questions, district court review in an enforcement proceeding is the better forum than is review in the court of appeals.

See S. Rep. 101-228 (Dec. 20, 1989).

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[31] *Union Elec. Co. v. EPA*, 593 F.2d 299 (8th Cir. 1979).

Although the Conference Committee ultimately did not adopt the Senate proposal, it is not possible to draw the same inference from the "noisy" deletion in 1990 as one could draw about the "silent" deletion in 1970. By 1990, a legal backdrop had been created by judicial decisions holding that the CAA already precluded pre-enforcement review. Citing *Asbestec*, *Solar Turbines*, *Union Electric*, and *Lloyd A. Fry Roofing*, the Senate Report noted that "several courts" had already held that pre-enforcement review was foreclosed. For this reason, the Report described the amendment as a provision designed to "clarify" and "confirm" that ACOs were not subject to pre-enforcement review. The Senate sought only to make more clear what had already been established in judicial decisions. In a similar vein, two Senate managers on the Conference Committee for the 1990 CAA amendments explained the reasoning behind the Conference Committee's deletion as follows:

> The conference agreement adopts the House provision. Section 307(b)(1) of the Act grants jurisdiction to the federal circuit courts of appeal to review "final action" of the administrator. The term "final action," however, is defined only by a non-exclusive list of particular kinds of actions. Several courts have specifically considered whether section 307(b)(1) provides for pre-enforcement review of administrative orders. As noted in Sen. Rep. 101-228, at 387, the Second, Third, and Eighth Circuits have already resolved and this issue and, as such, except with respect to judicial review of administrative penalty assessments and orders, there is no opportunity for pre-enforcement review and no new

statutory language addressing the issue is necessary.

See Chafee-Baucus Statement of Senate Managers on the House-Senate Conference Agreement, 136 Cong. Rec. 36,085 (1990). Congress thus decided that the pre-1990 version of the CAA already precluded pre-enforcement review, making it unnecessary to "clarify" its intention to preclude pre-enforcement review in the 1990 amendments.

IV. Discussion of Finality, Part Three: Why the Plain Language of the CAA Does, in Fact, Give ACOs the Status of Law

We have at our disposal several tools that might guide our interpretation of the CAA: the constitutional avoidance canon, statutory structure, legislative history, agency practice, and the problem of judicial review. Even so, no canon of statutory interpretation can trump the unambiguous language of a statute. As part I.A, *supra*, makes clear, several provisions of the CAA undeniably authorize the imposition of severe civil and criminal penalties based solely upon noncompliance with an ACO.[32] Although the Supreme Court has never addressed the precise meaning of 42 U.S.C. § 7413, it described the scheme as follows:

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[32] The Clean Water Act ("CWA") uses many provisions that are identical to those found in the Clean Air Act. One provision of the CWA states that the Administrator can issue compliance orders "on the basis of any information available to him." 33 U.S.C. § 1319(a)(1). Indeed, the entire subsection is entitled "compliance orders." Subsection (d) of the CWA provides that "any person who violates any order issued by the Administrator under subsection (a) . . . shall be subject to a civil penalty not to exceed $25,000 per day for each violation."

> The 1970 amendments also specified certain enforcement mechanisms. The Act empowered EPA to order compliance with an applicable implementation plan, § 113(a), 42 U.S.C. § 7413(a) (1982 ed.), and to seek injunctive relief against a source violating the plan or an EPA order, § 113(b), as amended, 42 U.S.C. § 7413(b) (1982 ed.). In addition, Congress prescribed criminal penalties for knowing violations of plans and orders, § 113(c), 42 U.S.C. § 7413(c) (1982 ed.).

Gen. Motors Corp. v. United States, 496 U.S. 530, 533-34, 110 S. Ct. 2528, 2530, 110 L. Ed. 2d 480 (1990). Thus, the Court is apparently under the impression that the plain language of the CAA speaks for itself: noncompliance with an ACO can trigger civil and criminal penalties.

In a similar vein, a leading treatise concludes that "[f]ailure to comply with [an ACO] is [an] independent violation under [the CAA]." *See Law of Environmental Protection* § 9.22 (Sheldon M. Novick et al. eds., 2003). At least one law review article has made a similar assessment. *See* Andrew I. Davis, *Judicial Review of Environmental Compliance Orders*, 24 Envtl. L. 189, 194 (1994) ("Regardless of the merits of the alleged violation underlying the compliance order, disregarding the order potentially subjects the recipient to accruing daily penalties. In addition, criminal penalties may be imposed. . . . Thus, failure to obey a compliance order subjects the recipient to civil, criminal, or administrative enforcement actions, including penalties of up to $25,000 per day.").

Thus, although there are very good reasons for concluding that Congress did not mean what it said, the unambiguous language of the CAA, a decision by the

Supreme Court, and scholarly commentary on the subject stand united in their support of the following proposition: Congress established a scheme in which noncompliance with an ACO issued "on the basis of any information available" can lead to the imposition of severe civil penalties and imprisonment—even if the EPA is incapable of proving an act of illegal pollution in court.

V. The Unconstitutionality of ACOs That Have the Status of Law

A. Cases

No court has discussed the constitutional issues inherent in a scheme in which an executive branch agency can (a) make a finding, on the basis of "any information available," that the law has been violated and (b) issue a compliance order which, if ignored, leads automatically to the imposition of severe civil penalties and perhaps imprisonment.

The cases that have addressed the issue of whether pre-enforcement review of ACOs is available[33] can be

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[33] The vast majority of courts have held that pre-enforcement review of CAA and CWA compliance orders is not available. *See, e.g., Lloyd A. Fry Roofing Co. v. EPA*, 554 F.2d 885 (8th Cir. 1977); *West Penn Power Co. v. Train*, 522 F.2d 302 (3d Cir. 1975); *S. Pines Ass'n v. United States*, 912 F.2d 713 (4th Cir. 1990); *Hoffman Group, Inc. v. EPA*, 902 F.2d 567 (7th 990); *Union Elec. Co. v. EPA*, 593 F.2d 299 (8th Cir. 1979); *Solar Turbines, Inc. v. Seif*, 879 F.2d 1073 (3d Cir. 1989); *Asbestec Const. Serv., Inc. v. EPA*, 849 F.2d 765 (2d Cir. 1988); *Laguna Gatuna, Inc. v. Browner*, 58 F.3d 564 (10th Cir. 1995); *Child v. United States*, 851 F. Supp. 1527 (D.Utah 1994). Courts have typically held that ACOs do not constitute final agency action, and that Congress impliedly precluded pre-enforcement review because such review would undermine Congress's intention to facilitate resolution of

grouped into two categories. The first category consists of those cases in which the courts recognize the fact that ACOs have the status of law but fail to grapple with the constitutional problems that arise from this legal status. These cases include *Allsteel, Inc. v. EPA*, 25 F.3d 312 (6th Cir. 1994), and *Alaska v. EPA*, 244 F.3d 748 (9th Cir. 2001)—the only two cases that have, to our knowledge, ever held that judicial review of an EPA order under the CAA or CWA can be had prior to an EPA enforcement proceeding.[34]

The second category consists of those cases in which courts have underappreciated the legal significance of ACOs. This category can, in turn, be divided into two subgroups. The first subgroup consists of cases in which courts conclude that a regulated party can attack, in a subsequent enforcement proceeding, the legal and factual bases for the EPA's conclusion that a CAA violation has been committed.[35] *See, e.g., Lloyd A. Fry*

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disputes through nonjudicial means. *See generally*, Andrew I. Davis, *Judicial Review of Environmental Compliance Orders*, 24 Envt'l L. 189 (1994).

[34] It is not surprising that these courts failed to deal with the constitutional issues we raise—especially the due process issue—because no "deprivation" of liberty or property is actually at issue until the Government imposes penalties in a subsequent enforcement proceeding. It might appear, then, that the due process issue is not squarely before the court when it is reviewing an ACO. However, subject matter jurisdiction ultimately hinges upon the validity of an enforcement scheme that gives ACOs the status of law, and the courts have an obligation to assess their subject matter jurisdiction *sua sponte*. *See Freytag v. C.I.R.*, 501 U.S. 868, 896, 111 S. Ct. 2631, 2648, 115 L. Ed. 2d 764 (1991).

[35] Although this view is understandable in light of the Constitution's requirement of due process and the separation-of-powers principle, there is no statutory authority for such an interpretation.

Roofing Co. v. EPA, 554 F.2d 885, 891 (8th Cir. 1977) ("[W]e are persuaded by the legislative history of the Clean Air Act Amendments of 1970 to hold that plaintiff lacks authority to initiate and maintain litigation to challenge the EPA's order . . . and that plaintiff must assert its claims as a defense or counterclaim in any action brought by the Administrator of EPA under section 113 of the Clean Air Act."); *Child v. United States*, 851 F. Supp. 1527, 1536 (D.Utah 1994) ("[I]n the event of any actual assessment of administrative penalties or a judicial enforcement action under § 309(a), plaintiffs would have an additional opportunity to challenge the EPA's findings in the district court."). If this view were correct, then the *underlying conduct* that triggered the issuance of the ACO would be the ultimate basis for liability, not noncompliance with the ACO. The ACO would fix no legal obligation whatsoever. Any judicial manipulation of the statute that would permit, in the context of an EPA enforcement suit alleging a violation of an ACO, an inquiry into the underlying violation—i.e., whether the alleged polluter actually undertook a "modification" without a permit or otherwise violated an SIP or EPA regulation—would have the effect of making the ACO nonfinal.[36] Only if noncompliance with the terms of an ACO amounts to an independent violation of the CAA (thus triggering civil penalties and criminal sanctions)

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[36] One treatise contends that courts were wrong to hold that ACOs are not final agency actions. The authors debunk the faulty premise that "[i]f EPA does proceed to court, the order can be challenged at that time." *Law of Environmental Protection* § 9:22, at 9-100 (Sheldon M. Novick et al. eds., 2003). Rather, the authors point out that "[f]ailure to comply with such an order is [an] independent violation under many of the statutes," including the CAA. *Id.*

can an ACO be said to have a "legal consequence." And only then can an ACO be considered final. It is not surprising that no court in this subgroup has found that ACOs constitute final agency action.

The second subcategory consists of those cases in which courts read out the penalty provisions of the statutory scheme. In *Solar Turbines, Inc. v. Seif*, 879 F.2d 1073, 1081 (3d Cir. 1989), the court held that "[t]he plain language of the statute does not identify any adverse consequences from violating a section 167 administrative order." However, as several commentators have observed, 42 U.S.C. § 7413(c)(1) provides that a violation of an order issued pursuant to CAA § 167, 42 U.S.C. § 7477, is a crime. *See Law of Environmental Protection* § 9.22 (Sheldon M. Novick et al. eds., 2003); Andre I. Davis, *Judicial Review of Environmental Compliance Orders*, 24 Envtl. L. 189, 220 (1994). This faulty premise enabled the Third Circuit to conclude that the ACO was merely a complaint-like instrument with no legal significance. *Solar Turbines*, 879 F.2d at 1081.[37] The court in *Asbestec Construction Services, Inc. v. EPA*, 849 F.2d 765 (2d Cir. 1988), similarly concluded that the regulated party failed to show that "its duties [or] obligations have been altered by the compliance order." *Id.* at 769. Finally, the court in *Southern Pines Associates v. United States*, 912 F.2d 713 (4th Cir. 1990), held that the ACO issued pursuant to the CWA was nonfinal. The court based its

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[37] At least one law review article echoes this incorrect view. *See* Note, *The Clean Air Act Amendments of 1990: Permits and Enforcement-The Guts of the New Law*, 18 U. Dayton L. Rev. 275, 305 (1992) ("[T]he function of the compliance order is to put the source on notice that other action may be taken if compliance is not achieved quickly.").

conclusion not simply on the fact that the CWA was modeled after the CAA and therefore "Congress meant to preclude judicial review of compliance orders under the CWA just as it meant to preclude pre- enforcement review under the CAA and CERCLA." *Id.* at 716. Rather, the court also held a misguided understanding of the legal status of ACOs: "Because the compliance order does not alter [the regulated parties'] obligations under the Act, and EPA can bring a suit whether or not it issues an order, [the regulated parties] are not faced with any greater threat from EPA just because EPA seeks to negotiate a solution rather than to institute civil proceedings immediately." *Id.* at 716 n. 3.

B. Constitutional Violations

The statutory scheme established by Congress—in which the head of an executive branch agency has the power to issue an order that has the status of law after finding, "on the basis of any information available," that a CAA violation has been committed—is repugnant to the Due Process Clause of the Fifth Amendment.[38] Before the Government can impose severe civil and criminal penalties, the defendant is entitled to a full and fair hearing before an impartial tribunal "at a meaningful time and in a meaningful manner." *Armstrong v. Manzo*, 380 U.S. 545, 552, 85 S. Ct. 1187, 1191, 14 L. Ed. 2d 62 (1965). As shown in Scenario One, *see supra* part I.A, the scheme enacted by Congress deprives the

[38] We decline to assess the constitutionality of the provision found in 42 U.S.C. § 7603, which empowers the EPA to issue a compliance order with the status of law, because that provision is not before us. Section 7603, which applies only in emergency situations and sharply limits the time period in which ACOs have injunction-like status, is certainly less offensive to the Constitution than the scheme established by 42 U.S.C. § 7413.

regulated party of a "reasonable opportunity to be heard and present evidence"[39] on the two most crucial issues: (a) whether the conduct underlying the issuance of the ACO actually took place and (b) whether the alleged conduct amounts to a CAA violation.

Confronted with this patent violation of the Due Process Clause, the EPA might be inclined to respond that it can always "save" the statute by voluntarily undertaking an adjudication prior to the issuance of an ACO. This is a fallacious argument, because the statute clearly establishes a scheme in which the decision to issue an ACO, like the decision to file a civil suit in district court, is made not after a full-blown adjudication of whether a CAA violation has been committed, but rather on the "basis of any information available to the Administrator." This is not an area in which the organic statute has set a vague standard, and there is simply no room for administrative discretion on this point. The EPA cannot, in short, amend the statute.

Far from rendering the statutory scheme more palatable, a pre-ACO adjudication would only highlight another constitutional problem with the CAA: the statutory scheme unconstitutionally delegates judicial power to a non-Article III tribunal. *See N. Pipeline Constr. Co. v. Marathon Pipe Line Co.*, 458 U.S. 50, 102 S. Ct. 2858, 73 L. Ed. 2d 598 (1982). The statutory scheme relegates Article III courts to insignificant tribunals. The district courts serve as forums for the EPA to conduct show-cause hearings.[40] And the courts

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[39] *Yakus v. United States*, 321 U.S. 414, 433, 64 S. Ct. 660, 671, 88 L. Ed. 834 (1944).

[40] The regulated party is, in essence, forced to show cause why it should not be imprisoned or subjected to civil penalties for violating the EPA's order.

of appeals are similarly emasculated, reviewing only whether the ACO has been validly issued—i.e., whether the Administrator based her decision to issue the ACO based upon "any information" as opposed to no information at all.[41] Without meaningful judicial review, the scheme works an unconstitutional delegation of judicial power. *See Crowell v. Benson*, 285 U.S. 22, 55-60, 52 S. Ct. 285, 293-97, 76 L. Ed. 598 (1932) (upholding the plenary power of an administrative agency to adjudicate certain questions of fact because significant Article III review of legal and factual issues was preserved); *Northern Pipeline*, 458 U.S. at 85, 102 S. Ct. at 2879 (holding that Article III review of the bankruptcy court under the "clearly erroneous" standard was not rigorous enough to save the statute); *id.* at 70 n. 23, 102 S. Ct. at 2871 n. 23 (noting that "[even] when Congress assigns ['public rights'] matters to administrative agencies, or to legislative courts, it has generally provided, and we have suggested it may be required to provide, for Article III judicial review"); *id.* at 91, 102 S. Ct. at 2882 (Rehnquist, J., concurring) (agreeing with the plurality that the scope of judicial review established by the statute was insufficient to save the statute); *id.* at 115, 102 S. Ct. at 2894 (White,

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[41] If a court of appeals were confronted with two ACOs—the first issued after a formal adjudication that the regulated party committed a CAA violation and the second issued after the Administrator obtained "any information" such as a newspaper clipping or anonymous phone tip—the court of appeals would be forced to deny each petition for review and hold that each ACO had been validly issued. With regard to the first ACO, the court of appeals would be forced to stop its analysis after finding that the "any information" standard had been met; any further inquiry into whether the EPA had "substantial evidence" of a CAA violation would be unnecessary and unauthorized.

J., dissenting) (opining that appellate review "will go a long way toward insuring a proper separation of powers"); *Commodity Futures Trading Comm'n v. Schor*, 478 U.S. 833, 853, 106 S. Ct. 3245, 3258, 92 L. Ed. 2d 675 (1986) (upholding a CFTC adjudicatory scheme after noting that Congress permitted meaningful judicial review); *see also* Richard H. Fallon, *Of Legislative Courts, Administrative Agencies, and Article III*, 101 Harv. L.Rev. 916 (1988) (concluding that meaningful judicial review in an Article III court is a necessary and sufficient requirement under the Constitution); Richard B. Saphire & Michael E. Solimine, *Shoring Up Article III: Legislative Court Doctrine in the Post CFTC v. Schor Era*, 68 B.U. L.Rev. 85 (1988) (asserting that judicial review by an Article III court is a necessary but insufficient requirement of any delegation of judicial power).

VI. Conclusion

The Clean Air Act is unconstitutional to the extent that mere noncompliance with the terms of an ACO can be the sole basis for the imposition of severe civil and criminal penalties. Therefore, ACOs lack finality because they do not meet prong two of the *Bennett* test. We thus conclude that courts of appeals lack jurisdiction to review the validity of ACOs. The EPA must do what it believes it has been required to do all along—namely, prove the existence of a CAA violation in district court, including the alleged violation that spurred the EPA to issue the ACO in this case.

PETITIONS DISMISSED.

BARKETT, Circuit Judge, specially concurring, WILSON, Circuit Judge, joins:

Upon reconsideration, I agree with Judge Tjoflat that this court does not have jurisdiction to review the EAB's order and that, to enforce its determination that TVA has violated the Clean Air Act, 42 U.S.C. § 7401 *et seq.*, the appropriate procedure is for the EPA to file an original action in the district court, just as it does in most other instances in which it has determined that a violation has occurred. *See* 42 U.S.C. § 7413(b) (describing civil judicial enforcement); *see also* Second Brief of Respondents at 9 (explaining the EPA's normal course of action for enforcing a compliance order).

As Judge Tjoflat notes, 42 U.S.C. §§ 7413(a)(1), (3) and (5) each provide that the Administrator can conclude that there has been a violation of the requirements or prohibitions of the Clean Air Act "on the basis of any information." *Id.; see also* 42 U.S.C. § 7413(a)(2) (omitting the word "any" from comparable language in the provision concerning "State failure to enforce SIP or permit program"). Having concluded "on the basis of any information" that a violation has occurred, the Administrator can either:

> (1) issue an order requiring compliance with the requirements or prohibitions at issue, 42 U.S.C. §§ 7413(a)(1)(A), (a)(2)(C) and (a)(3)(B), or prohibiting construction or modification, § 7413(a)(5)(A);
>
> (2) obtain an administrative penalty order by following the hearing procedures of the Administrative Procedure Act, 5 U.S.C. § 554 and 556, *see* 42 U.S.C. §§ 7413(a)(1)(B), (a)(2)(B), (a)(3)(A), (a)(5)(B), and (d);

(3) bring a civil action in district court for injunctive relief and fines, §§ 7413(a)(1)(C), (a)(2)(C), (a)(3)(C), (a)(5)(C), and (b); and/or

(4) request that the Attorney General commence a criminal action, § 7413(a)(3)(D).

Under the statutory scheme, the first option for federal enforcement—issuing an administrative order, like the EAB's order before us—can be pursued based on "any information available," without giving the alleged violator an opportunity to challenge the information upon which the order of compliance is based. Although an alleged violator can "challenge" the Administrator's conclusion by conferring with him/her, the statute does not require that the Administrator consider any such arguments or evidence brought to his/her attention beyond that of a good faith effort to comply. *See* 42 U.S.C. § 7413(a)(4). Thereafter, the statutory scheme provides that penalties, either civil or criminal, can be assessed based only upon a showing that the terms of the order to comply were violated. *See* 42 U.S.C. § 7413(b)(2) (empowering the Administrator to commence a civil action for penalties against an alleged violator "whenever such person has violated, or is in violation of, . . . a requirement or prohibition of any . . . order . . . issued . . . under this chapter"); § 7413(c)(1) (subjecting any person convicted of "knowingly violating . . . any order under subsection (a) of [§ 7413]" to criminal fines and/or imprisonment). This scheme must be deemed violative of the due process protections of our Constitution.

Although the Administrator in this case attempted to fill the gap in the statute and provide some process to TVA,[1] it cannot be deemed sufficient because constitutional due process cannot be provided on an ad hoc basis under the direction and control of the entity whose decision is being challenged.[2] The appropriate course of action, as noted by Judge Tjoflat, would have been for the EPA to file an action in federal district court pursuant to 42 U.S.C. § 7413(b) as it does in cases involving private energy companies. I recognize that the EPA believed that it could not have pursued this course of action against another government agency for the multitude of reasons presented and rejected in our earlier opinion in this case. However, as we have now laid all these concerns to rest, the EPA should treat TVA as it does any private energy company for enforcement purposes. Thus, the EPA's present recourse is to file an original action in federal district court to enforce its order that a violation has occurred.

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[1] After conferring with TVA and amending the initial compliance order several times, the EPA crafted a reconsideration procedure during which (1) the parties engaged in pre-hearing discovery over two months and (2) an administrative law judge (ALJ) presided over a multi-day evidentiary hearing where each party presented and cross-examined witnesses. The ALJ then prepared and transmitted the entire record to the EAB for its consideration.

[2] To avoid this due process violation, we conclude that no penalties or other adverse consequences could flow directly from administrative compliance orders. Thus, we can have no jurisdiction over the order before us under 42 U.S.C. § 7607(b)(1) because it lacks the legal consequences required under *FTC v. Standard Oil of Calif.*, 449 U.S. 232, 239-43, 101 S. Ct. 488, 66 L. Ed. 2d 416 (1980), to make it a final agency action.

[APPENDIX OMITTED]

APPENDIX B

UNITED STATES COURT OF APPEALS
FOR THE ELEVENTH CIRCUIT

Nos. 00-12310, 00-12311, 00-12349, 00-12457 to 00-12459, 00-15936 AND 00-16234 TO 00-16236.

TENNESSEE VALLEY AUTHORITY, PETITIONER,
GEORGIA POWER COMPANY, INTERVENOR

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, JOHN H. HANKINSON, JR., REGIONAL ADMINISTRATOR, ET AL., RESPONDENTS
ALABAMA POWER COMPANY, DUKE ENERGY CORPORATION, PETITIONERS,
GEORGIA POWER COMPANY, INTERVENOR

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, JOHN H. HANKINSON, JR., REGIONAL ADMINISTRATOR, ET AL., RESPONDENTS
TENNESSEE VALLEY AUTHORITY, PETITIONER,
GEORGIA POWER COMPANY, INTERVENOR

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, JOHN E. HANKINSON, JR., REGIONAL ADMINISTRATOR, ET AL., RESPONDENTS
TENNESSEE VALLEY AUTHORITY, PETITIONER,
GEORGIA POWER COMPANY, INTERVENOR

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, JOHN H. HANKINSON, JR., REGIONAL ADMINISTRATOR, ET AL., RESPONDENTS
ALABAMA POWER COMPANY, DUKE ENERGY CORPORATION, PETITIONERS,
GEORGIA POWER COMPANY, INTERVENOR

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, JOHN H. HANKINSON, JR., REGIONAL ADMINISTRATOR, ET AL., RESPONDENTS
TENNESSEE VALLEY AUTHORITY, PETITIONER,
GEORGIA POWER COMPANY, INTERVENOR

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, JOHN H. HANKINSON, JR., REGIONAL ADMINISTRATOR, ET AL., RESPONDENTS
TENNESSEE VALLEY AUTHORITY, PETITIONER

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS
ALABAMA POWER COMPANY, PETITIONER

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS
TENNESSEE VALLEY PUBLIC POWER ASSOCIATION, MEMPHIS LIGHT, GAS & WATER DIVISION, ELECTRIC POWER BOARD OF CHATTANOOGA, ET AL., PETITIONERS

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS
DUKE ENERGY CORPORATION, PETITIONER

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS

Jan. 8, 2002

PETITIONS FOR REVIEW OF ORDERS OF THE ENVIRONMENTAL PROTECTION AGENCY

Before: TJOFLAT, BARKETT AND WILSON, Circuit Judges.

BARKETT, Circuit Judge:

Pursuant to the Clean Air Act (CAA), 42 U.S.C. § 7607(b), the Tennessee Valley Authority (TVA), joined by a number of private power companies and industry associations, petitions for review of three orders issued to it by the Environmental Protection Agency (EPA).[1] Centrally at issue in these orders is

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[1] The first is an Administrative Compliance Order (ACO) issued on November 3, 1999, and last amended on April 10, 2000. The second is a Reconsideration Notice issued on May 4, 2000, in which EPA agreed to review and reconsider the ACO, but stated that the ACO would remain in effect while the review process took place. The third is a Final Order on Reconsideration issued by EPA's Environmental Appeals Board (EAB) on September 15,

EPA's determination that certain maintenance and repair projects conducted by TVA at many of its coal-fired power plants in the past twenty years constituted "modifications" that required TVA to obtain pre-construction permits and to bring the plants into compliance with the more stringent emissions limitations that apply to new facilities. The challenged orders therefore require TVA to obtain these permits after the fact, and to install the mandated pollution control devices at all the "modified" plants. In response to EPA's determination, TVA principally argues that the maintenance it conducted at its plants was "routine," and as such, is statutorily exempted from the requirements that apply to "modifications." TVA contends that EPA's orders rely on a new and different interpretation of "routine," and that its attempt to apply that interpretation retroactively deprived TVA of fair notice. It also challenges the methodology by which EPA determined whether TVA's projects at the power plants resulted in an emissions increase. Arguing that

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2000, in which the EAB sustained most of the original Compliance Order. For the purposes of our review, we have consolidated ten separate petitions arising in two cases relating to the three orders. The first case, *TVA I*, encompasses the petitions seeking review of the first two orders. Joining TVA (nos. 00-12310 and 00-12459) in that case are the Alabama Power Company (APC) (nos. 00-12311 and 00-12458), Duke Energy Corporation (Duke) (nos. 00-12311 and 00-12458), Tennessee Valley Public Power Association (TVPPA) (nos. 00-12349 and 00-12457), and, as an intervenor in all the petitions, the Georgia Power Company (GPC). The second case, *TVA II*, challenges the EAB decision. TVA is joined in that case by APC (no. 00-16234), Duke (no. 00-16236), TVPPA (no. 00-16235), and Memphis Light, Gas & Water Division, Electric Power Board of Chattanooga, Middle Tennessee Electric Membership Corporation, North Georgia Electric Membership Corporation, and Volunteer Electric Cooperative (no. 00-16235).

EPA's determination was arbitrary, capricious, and contrary to law, TVA seeks to have the orders set aside.

EPA has filed a number of motions to dismiss, arguing that for various reasons this Court lacks subject matter jurisdiction to review the dispute between EPA and TVA. EPA has also moved to dismiss all parties other than TVA on the ground that they lack standing to challenge orders that were not issued, and do not apply, to them. Since these are threshold challenges, we must address them first in order to determine whether we may consider the merits of the petitions before us. We held oral argument to consider preliminarily only these motions and we resolve them here. While a number of EPA's challenges present complex and close questions, ultimately we are not persuaded that we lack jurisdiction to review the orders issued to TVA, nor that the private petitioners lack standing.

BACKGROUND

At this juncture, we confine ourselves to a brief statement of the facts and procedural history relevant to EPA's challenges to this Court's jurisdiction over the petitions that have been filed in the case. This action concerns a dispute arising under the CAA, 42 U.S.C. §§ 7413, 7477. Since one of the goals of the CAA is to prevent increases in air pollution resulting from modifications made to existing sources of pollutants, such as power plants, under the Act's New Source Performance Standards (NSPS) and New Source Review (NSR) programs, an existing source of pollutants is required to obtain a permit before it makes any such pollution-

increasing modifications.[2] TVA, a corporate agency and instrumentality of the United States, 16 U.S.C. § 831, owns and operates eleven coal-fired electrical power generating plants. At the heart of this dispute is EPA's contention that in the past two decades TVA undertook fourteen projects at nine of these coal-fired plants without first obtaining the required permits. As noted, TVA argues that its modifications constituted "routine" maintenance, repairs, or replacements that are statutorily exempt from NSPS and NSR regulation.[3] It also challenges the method EPA employed to determine whether its projects at the plants in question resulted in emissions increases.

On November 3, 1999, EPA issued an Administrative Compliance Order (ACO) to TVA, pursuant to §§ 113(a) and 167 of the CAA, 42 U.S.C. §§ 7413(a) and 7477 (1999). The ACO contained findings that TVA's "modifications" of several of its operating plants violated certain provisions in the CAA, and did not fall under any regulatory exemptions. The ACO directed

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[2] A "major modification" is defined as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act." 40 C.F.R. § 52.21(b)(2)(i).

[3] A central disagreement between TVA and EPA is whether "routine" should be defined relative to an industrial category or to a particular unit. TVA contends that a maintenance or replacement project that may need to be undertaken only once or twice during the life of a particular unit—and so in that sense is not routine—is nonetheless routine within the industrial category, since it has to be done once or twice within the life of every such unit. According to TVA, EPA formerly used the "industrial category" as the baseline and is now treating the individual unit as the frame of reference instead.

TVA to take numerous remedial measures pursuant to the CAA, including (i) proposing a reasonable schedule for obtaining permits and installing pollution controls that allegedly should have been installed when the modifications were constructed, and (ii) providing an audit of its other construction activities to identify any additional unpermitted modifications. The ACO stated that "[f]ailure by TVA to comply with . . . [this] order may result in administrative action for appropriate relief including civil penalties, as provided in [§] 113 of the Act, 42 U.S.C. § 7413." At a conference on December 20th and by subsequent letter, TVA notified EPA of its objections to the ACO and indicated its intention to seek review of the Order in this Court if EPA did not withdraw it. TVA filed a petition in this Court for review of the November 3rd ACO, as amended, on May 4th, 2000. Also petitioning for review of the ACO are Alabama Power Company (APC), Duke Energy Corporation (Duke), and the Tennessee Valley Public Power Association (TVPPA).

In response to TVA's earlier request to reconsider the ACO and to withdraw or stay it, the Regional Administrator of the EPA issued a letter on May 4th, 2000—the same day TVA filed its petition in this Court—granting reconsideration of the ACO, but indicating that the Order, which was to have taken effect on March 6, 2000, would remain in effect during the review process, and expressing the expectation that TVA would comply with its conditions. In its letter, EPA stated that then-Administrator Browner had directed the Environmental Appeals Board (EAB) to conduct reconsideration proceedings and to render a decision by September 15, 2000 with findings of fact and conclusions of law. TVA, APC, Duke, and TVPPA then

filed a petition for review of EPA's May 4th letter refusing to withdraw the ACO or to stay it pending the reconsideration proceedings.

The May 4th Letter set forth a schedule for conducting the EAB review process. It provided:

> (1) by no later than May 31, 2000, EPA will provide to TVA a core set of documents relevant to the Order and the issues set forth by TVA on December 20, 1999; (2) between the date of this letter and June 30, 2000, TVA and EPA enforcement staff may exchange document requests and interrogatories, and take depositions of persons who may have information relevant to the factual and legal issues surrounding the Order; (3) on or about July 15th, a hearing no longer than six days shall occur to adduce relevant oral testimony; and (4) no later than July 31st, the parties shall proffer documents and hearing transcripts that form the basis of their legal and factual arguments as well as legal memoranda in support of their claims.

The Administrator selected three members of the EAB to conduct the review. The EAB then asked an Administrative Law Judge (ALJ) to supervise discovery and hold an evidentiary hearing to develop a record for the EAB's review; however, the ALJ was not asked to make any findings of fact or conclusions of law. The EAB issued its decision on September 15, 2000, determining that EPA had either abandoned or failed to prove roughly half of the allegations of the ACO, but that it had proved the remainder of the alleged violations. It found at least one violation at all but one of the plants that had been cited in the ACO, rejecting TVA's argument that the projects at the

plants constituted "routine maintenance" and that TVA lacked fair notice of EPA's interpretation of "routine." Finally, it sustained the remedies sought by EPA, although it vacated the surrender of SO_2 allowances as premature and stated that the determination of what pollution controls will be required under the permits must be made on a case-by-case basis by the applicable permitting authority. TVA then petitioned for review of the EAB decision in this Court.[4] This case consolidates all the petitions that have been filed in response to the three orders issued to TVA by EPA.[5]

DISCUSSION

The Department of Justice, on behalf of EPA, has asserted that this Court lacks subject matter jurisdiction to hear the petitions in this case. It argues that (a) the issuance of the EAB decision rendered moot all petitions relating to earlier orders issued by EPA; (b) TVA lacks independent authority to conduct this litigation over the opposition of the Attorney General; (c) there is no justiciable case or controversy because both EPA and TVA are executive branch agencies whose leaders serve at the pleasure of the President; (d) the EAB decision is not a reviewable final order; (e) the EAB decision is not ripe for judicial review because TVA has not first submitted the dispute to the Attorney General for resolution as required by Executive Order; and (f) the petitioners other than TVA, none of whom received the challenged orders

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[4] In addition to TVA, several other parties separately filed petitions for review of the EAB decision. *See supra* note 1.

[5] Before the petitions were consolidated, TVA moved to intervene in 00-16234, 00-16235, and 00-16236. Since the petitions have now been consolidated, this motion is denied as moot.

from EPA nor is subject to them, lack standing to petition this Court for review.

We first dispose of matters regarding the ACO and the May 4th Letter. We then consider the interrelated arguments relating to the EAB's decision. Finally, we consider the standing issue relating to petitioners other than TVA.

A. Mootness: The Effect of the EAB Decision on the ACO and the May 4th Letter

Although we have carried with the case EPA's motions to dismiss on the ground that the ACO and the May 4th Letter are not reviewable because they are not final agency actions, EPA now argues that TVA's petitions to set aside the ACO and the May 4th letter are moot, since the subsequent EAB decision supplants the ACO. EPA therefore argues that, if there is any reviewable agency action at all, it is only the EAB decision, because that is the only ruling to which TVA remains subject. Initially, TVA argued that the EAB decision did not withdraw or supercede the ACO, but simply "sustained" it. APC EAB Brief at 34-35.[6] For two reasons it urged us to set aside the EAB decision and review the ACO on the administrative record certified to this Court on June 15, 2000. First, it argued that the EAB decision is EPA's litigation position, a post hoc rationalization for an order that was already final, and that it is therefore not entitled to any deference but instead should be viewed "critically." Second, TVA argued that the EAB's review process violated "basic

[6] Some of the arguments are made by APC in its brief, rather than by TVA, but to avoid further complicating an already complicated discussion, and since all the petitioners have adopted each other's briefs, we will continue to refer to TVA.

concepts of fair play" and therefore, under the APA, should be set aside as "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). At oral argument, however, TVA conceded that its position with regard to the ACO and the May 4th letter was simply protective, in the event the EPA sought to enforce any provisions contained therein and not contained in the EAB final decision. All parties at oral argument agreed that the only viable order in this cause is the EAB final decision of September 15, 2000 and that the ACO and May 4th letter are of no further force or effect. Accordingly, we conclude that, in light of the final decision of the EAB, the ACO and May 4th letter are moot.[7] We therefore turn to EPA's various arguments asserting that we lack jurisdiction to review the EAB's final decision.

B. TVA's Independent Litigating Authority

EPA argues that TVA lacks independent litigating authority to bring this action over the opposition of the Attorney General. However, EPA has cited no case, and we are aware of none, that can support its position. Since its inception in 1933, TVA has represented itself in litigation by attorneys of its own choosing. Moreover, on three separate occasions, TVA conducted litigation over the objections of the Attorney General, and in all three cases the courts found that TVA had independent litigating authority under the TVA Act. *See Dean v. Herrington*, 668 F. Supp. 646 (E.D. Tenn. 1987); *Cooper v. TVA*, 723 F.2d 1560 (Fed.Cir. 1983); *Algernon Blair Indus. Contractors, Inc. v. TVA*, 540 F.

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[7] Petitions 00-12310, 00-12311, 00-12349, 00-12457, 00-12458, and 00-12459 are thus dismissed as moot. EPA's motions to dismiss those petitions are denied as moot.

Supp. 551 (M.D. Ala. 1982). In *Algernon Blair*, the Attorney General moved to strike the appearance of TVA's attorneys and to substitute attorneys from the Department of Justice. As in the present case, DOJ pointed to 28 U.S.C. § 519, which provides that "except as otherwise authorized by law, the Attorney General shall supervise all litigation to which the United States, an agency, or officer thereof is a party. . . . " 540 F. Supp. at 552 (quoting 28 U.S.C. § 519). The court nonetheless clearly rejected DOJ's position:

> [T]he Court is of the opinion that although the language of the TVA Act conferring independent litigation authority, standing alone, is arguably subject to differing constructions, the history of the establishment of TVA, the actions of Congress, and the actions of the Department of Justice over the forty-nine year history of the Act seem to compel the conclusion that the correct interpretation is that the language of the Act does confer independent authority on TVA.

Id. at 556. The court observed that Congress has repeatedly recognized TVA's responsibility for its own litigation. For example, in a 1938 Congressional investigation into TVA's defense in several early court proceedings challenging its constitutionality, the investigating committee wrote that TVA, "unlike ordinary Government departments, has no statutory right to demand legal assistance from the Department of Justice." *Id.* at 554. Similarly, the court observed that the legislative history of the Contracts Disputes Act of 1978 acknowledges that "because the Tennessee Valley Authority handles its own litigation, its attorneys, rather than the Attorney General, will enforce its rights under [the fraud section of the Act.]"

Id. at 555. The court also noted that, "prior to this case, the position of the Department of Justice on this issue[,] expressed in internal memoranda and letters, and before the courts, has been that TVA had independent litigating authority." *Id.*

The two other cases in which DOJ challenged TVA's independent litigating authority agreed with the analysis in *Algernon Blair* and held that, under the TVA Act, TVA has authority to represent itself. *See Cooper*, 723 F.2d at 1563-65; *Dean*, 668 F. Supp. at 653. We cannot agree with EPA's contention that all of these cases were wrongly decided. We agree that the unique history of the TVA[8] and its intended independence compel the results reached in these cases. As the court noted in *Dean:*

> From its inception, TVA has enjoyed an independence possessed by perhaps no other federal agency. The original House Committee stated upon TVA's inception: "We intend that [TVA] shall have much of the essential freedom and elasticity of a private business corporation." McCarthy, Keeping TVA Unshackled—A Continuing Struggle, 49 Tenn. L. Rev. 699, 700 (Summer 1982) (citing H.R. Rep. No. 130, 73d Cong., 1st Sess. 19 (1933)). TVA's independence is underscored by its corporate form, its maintenance of a separate legal staff, *see Algernon Blair Industrial Contractors, Inc. v. TVA*, 540 F. Supp. 551 (M.D. Ala. 1982), its removal from centralized control in Washington, its discretionary ratemaking authority, *see Mobil Oil Corp. v. TVA*,

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[8] TVA is a federal corporation created by the Tennessee Valley Authority Act of 1933, 16 U.S.C. §§ 831-831ee (1994 & Supp. IV 1998).

> 387 F. Supp. 498, 509 n. 28 (N.D.Ala.1974), and its exemption from at least 16 provisions of the Administrative Procedures Act, 49 Tenn. L. Rev. at 701, n. 6.

Id. at 652 n 1.

Moreover, in 1983 Congress confirmed TVA's independent litigating authority when it prohibited the Attorney General from using any funds appropriated by Congress "to represent the Tennessee Valley Authority in litigation" unless requested by TVA to do so. Public Law No. 98-181, § 1300, 97 Stat. 1292. The congressional history for this prohibition reveals the following: "In its 50-year history, TVA has conducted its own litigation and no court at any level has ever questioned TVA's right to do so. If TVA were to delegate or otherwise surrender jurisdiction over its legislatively mandated responsibilities for litigation in this area, it would seriously undermine its independence over all other aspects of its program." H.R.Rep. No. 98-232, 98th Cong., 1st Sess. (1983), at 45-46.

The decisions of other courts, the language of the TVA Act, Congress' subsequent statements, and TVA's long history of self-representation without DOJ objection convince us that TVA does possess independent litigating authority and EPA's argument is therefore without merit.

C. Justiciability: Intrabranch Disputes and the "Case or Controversy" Requirement

EPA next argues that there is no justiciable case or controversy here because both TVA and EPA are executive branch agencies whose leaders serve at the pleasure of the President, and disputes between commonly controlled agencies lack the concrete adversity

necessary to present an Article III case or controversy. The Constitution's case or controversy requirement gives rise to a "general principle that no person may sue himself." *United States v. ICC*, 337 U.S. 426, 430, 69 S. Ct. 1410, 93 L. Ed. 1451 (1949). EPA argues that, although the Supreme Court has recognized certain exceptions to this principle and has occasionally found a justiciable controversy where the United States was both plaintiff and defendant, the present case does not fall within any of the relatively narrow circumstances where this has occurred. Recognizing that many cases exist in which executive branch agencies have litigated as adverse parties, EPA argues that all of these cases are distinguishable. According to EPA, intra-executive branch disputes can be part of an Article III case or controversy only where: (1) one of the disputants is an independent regulatory agency the leaders of which are insulated from the President's discretionary removal authority; (2) the litigation involves an agency whose position is aligned with that of a private party who is the real party in interest; or (3) one of the parties is the target of a federal criminal investigation or prosecution. Arguing that TVA's dispute with EPA cannot fit within any of these exceptions, EPA contends that TVA's petitions should be dismissed.

The first class of cases that EPA seeks to distinguish are those involving agencies whose leaders are statutorily protected against removal, such as the Federal Labor Relations Authority, ("FLRA"),[9] the Federal

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[9] The FLRA has opposed other Executive Branch agencies in a number of cases concerning the rights of federal employees. These include *NASA v. FLRA*, 527 U.S. 229, 119 S. Ct. 1979, 144 L. Ed. 2d 258 (1999), *National Fed'n of Fed. Employees, Local 1309 v. Department of the Interior*, 526 U.S. 86, 119 S. Ct. 1003, 143 L. Ed.

Energy Regulatory Commission ("FERC"),[10] the former Federal Maritime Board ("FMB"),[11] the former Interstate Commerce Commission ("ICC"),[12] and the former Federal Power Commission ("FPC").[13] Each of these entities is (or was) an independent regulatory agency led by presidentially appointed, Senate confirmed officials serving fixed terms. However, all of these appointees enjoy (or enjoyed) protection from removal for reasons other than "inefficiency, neglect of duty, or malfeasance in office."[14] EPA argues that this

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2d 171 (1999), and *Department of the Treasury v. FLRA*, 494 U.S. 922, 110 S. Ct. 1623, 108 L. Ed. 2d 914 (1990).

[10] FERC and the Department of the Interior advocated opposing positions concerning the licensing of hydroelectric development on federally protected land in *Escondido Mut. Water Co. v. La Jolla Band of Mission Indians*, 466 U.S. 765, 104 S. Ct. 2105, 80 L. Ed. 2d 753 (1984).

[11] The former FMB advocated positions adverse to positions advocated by the Department of Justice in its antitrust enforcement capacity in *Far East Conference v. United States*, 342 U.S. 570, 72 S. Ct. 492, 96 L. Ed. 576 (1952), and *FMB v. Isbrandtsen Co.*, 356 U.S. 481, 78 S. Ct. 851, 2 L. Ed. 2d 926 (1958).

[12] The former ICC defended rate decisions in favor of freight carriers and against federal agencies as shippers (or advocates for shippers) in *United States v. ICC*, 352 U.S. 158, 77 S. Ct. 241, 1 L. Ed. 2d 211 (1956), *Secretary of Agriculture v. U.S.*, 347 U.S. 645, 647, 74 S. Ct. 826, 98 L. Ed. 1015 (1954), *United States v. ICC*, 337 U.S. 426, 69 S. Ct. 1410, 93 L. Ed. 1451 (1949), and *ICC v. Jersey City*, 322 U.S. 503, 64 S. Ct. 1129, 88 L. Ed. 1420 (1944).

[13] The FPC defended licensing decisions authorizing private development of hydroelectric sites that the Department of the Interior sought to control in *Udall v. FPC*, 387 U.S. 428, 87 S. Ct. 1712, 18 L. Ed. 2d 869 (1967), and *United States ex rel. Chapman v. FPC*, 345 U.S. 153, 73 S. Ct. 609, 97 L. Ed. 918 (1953) (same).

[14] *See* 5 U.S.C. § 7104(b)-(c) (1994) (FLRA); 41 U.S.C. § 7171(b) (1994) (FERC); Reorg. Plan No. 21 of 1950 § 102, 49 U.S.C. App. § 11 (1988) (ICC). FPC Commissioners served fixed terms in a

distinction is significant because for-cause removal provisions effect a reduction in presidential control that is typically substantial and in some circumstances constitutionally decisive. In this case, both the head of the EPA and, EPA argues, the three-member board that heads TVA, *see Morgan v. TVA*, 115 F.2d 990 (6th Cir. 1940) (upholding President's power to remove a TVA director), serve at the pleasure of the President.

The second category of cases EPA seeks to distinguish consists of those in which, although federal agencies were involved on both sides, the litigation involved federal agencies and non-governmental real parties in interest who claimed rights under decisions of other federal agencies. EPA points to a series of related bank merger cases in which the Department of Justice filed civil anti-trust actions to enjoin the completion of bank mergers that had been approved by the Comptroller of the Currency.[15] The Comptroller of the Currency, a Treasury Department official who serves at the pleasure of the President, intervened to defend his decisions pursuant to specific intervention authority

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quasi-adjudicatory capacity, and enjoyed implied for-cause protections, although the issue was never litigated. *See* 16 U.S.C. § 792 (1976); *Wiener v. United States*, 357 U.S. 349, 353-56, 78 S. Ct. 1275, 2 L. Ed. 2d 1377 (1958).

[15] *See, e.g., United States v. Connecticut Nat'l Bank*, 418 U.S. 656, 94 S. Ct. 2788, 41 L. Ed. 2d 1016 (1974); *United States v. Marine Bancorporation*, 418 U.S. 602, 94 S. Ct. 2856, 41 L. Ed. 2d 978 (1974); *United States v. First City Nat'l Bank*, 386 U.S. 361, 87 S. Ct. 1088, 18 L. Ed. 2d 151 (1967); *see also, e.g., United States v. Philadelphia Nat'l Bank*, 374 U.S. 321, 83 S. Ct. 1715, 10 L. Ed. 2d 915 (1963) (comparable antitrust action in which the Comptroller did not participate).

conferred by the Bank Merger Act of 1966.[16] None of the Court's bank merger decisions discussed the justiciability of such a dispute between the Department of Justice and the Comptroller General, because, EPA suggests, the real dispute arose between the United States and the banks that sought to merge, and the existence of a case or controversy between those real parties in interest was self-evident. EPA also points to *United States v. ICC*, 337 U.S. 426, 69 S. Ct. 1410, 93 L. Ed. 1451 (1949), which concerned the rates that the Army paid for certain freight shipments. In that decision, the Court's finding of justiciability was supported in part by the observation that certain railroads, rather than the ICC, were the "real parties in interest" in opposition to the government as shipper. *ICC*, 337 U.S. at 432, 69 S. Ct. 1410. The present case, by contrast, does not involve any third parties as the real parties in interest. TVA is the real party in interest, and the private parties' asserted interests relate to the effect of the EPA's orders on TVA. EPA therefore argues that this case is distinguishable from *ICC*.

Finally, EPA attempts to distinguish *United States v. Nixon*, 418 U.S. 683, 94 S. Ct. 3090, 41 L. Ed. 2d 1039 (1974), in which the Court found that a dispute between a special prosecutor and President Nixon concerning the validity of a subpoena issued to the President for

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[16] *See* 12 U.S.C. § 1828(c)(7)(D). Enactment of this intervention provision in 1966 assured that courts would not bar the Comptroller from participating in antitrust litigation on grounds that it had no cognizable interest. *See, e.g., United States v. Third Nat'l Bank*, 36 F.R.D. 7, 10 (M.D. Tenn. 1964) (denying intervention because "the Comptroller, having fully exercised his statutory authority and duty, ha[d] no interest in the subject matter of the [subsequent antitrust enforcement] action").

the collection of evidence in a pending criminal case was justiciable. The Court observed that a Department of Justice regulation gave the special prosecutor limited protection from immediate removal, at least "[s]o long as this regulation [remained] in force." *Id.* at 696, 94 S. Ct. 3090. In addition, the Court noted that the President had a personal interest in the proceeding, having been identified as an unindicted co-conspirator, and that questions as to the validity of subpoenas incident to criminal investigations had traditionally been considered justiciable. *See id.* at 687, 697, 94 S. Ct. 3090. The Court then concluded that "[i]n light of the uniqueness of the setting in which the conflict ar [ose], the fact that both parties [were] officers of the Executive Branch [could not] be viewed as a barrier to justiciability." *Id.* at 697, 94 S. Ct. 3090.

Initially, we note that none of the cases identified by EPA delineate three narrow exceptions to a general rule of non-justiciability. Each of these cases addressed only the situation before the court and did not purport to establish any rule of general applicability or exceptions thereto. In *ICC*, for example, the Court did not base its decision solely on the conclusion that the railroads were the real parties in interest.[17] It also stated that it was necessary to inquire whether the case "involves controversies of a type which are traditionally

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[17] The basic facts of the case are as follows. The United States provided wharfage services at certain ports for railroad companies transporting goods to the ports. When the United States sought reimbursement for these services, the railroads refused to pay. The United States then asked the Interstate Commerce Commission (ICC) to order the railroads to compensate the United States for the services. ICC rejected the United States' request, and the United States sought judicial review of the agency's order dismissing the claim. 337 U.S. at 428-29, 69 S. Ct. 1410.

justiciable," 337 U.S. at 430, 69 S. Ct. 1410. It noted, moreover, that since all other shippers could invoke the protection of the ICC, the government, in its capacity as a shipper, should be entitled to the same regulatory protection. *Id.* at 431, 69 S. Ct. 1410. Finally, although one issue raised by the case involved the railroads' liability to the government, the second issue involved the government's challenge of the ICC's order as arbitrary and capricious. *Id.* In this second issue, government agencies appeared to be the real parties in interest on both sides. Nonetheless, the Court held that "[t]his charge alone would be enough to present a justiciable controversy." *Id.*

We are also unpersuaded by EPA's effort to place *Nixon* in a class by itself. As in *ICC*, the *Nixon* Court asked whether the dispute involved "the kind of controversy that courts traditionally resolve." 418 U.S. at 696, 94 S. Ct. 3090. Moreover, it found that in the circumstances of the case, where the special prosecutor sought subpoenaed material for a criminal prosecution opposed by the President with his assertion of privilege against disclosure, "th[e] setting assures there is 'that concrete adverseness which sharpens the presentation of issues upon which the court so largely depends for illumination of difficult constitutional questions.'" *Id.* at 697, 94 S. Ct. 3090 (quoting *Baker v. Carr*, 369 U.S. 186, 204, 82 S. Ct. 691, 7 L. Ed. 2d 663 (1962)). *Nixon* therefore appears to articulate a general analytical framework, directing courts to inquire whether the controversy is one that is typically justiciable, and whether the setting of the case is one that demonstrates concrete adversity between the parties.

Three trial court decisions have specifically addressed the justiciability of disputes between TVA and

other executive branch agencies whose heads serve at the pleasure of the President. In *United States ex rel. TVA v. Easement and Right of Way Over Certain Land in Bedford County, Tennessee*, 204 F. Supp. 837 (E.D. Tenn. 1962)—the only one of the cases decided prior to *Nixon*—TVA sought to condemn land in which the Farmers' Home Administration (FHA) held a security interest. The district court found that "there could not be any issue between the TVA and FHA, both being the United States, which this Court could litigate or adjudicate. . . . The settlement of interagency problems within the United States Government is not a judicial function but rather an administrative function." *Id.* at 839. However, the court also observed that "[a]lthough the TVA is a federal governmental corporation, with jurisdictional and procedural consequences that may not be the same in all instances as though it were an agency of the Federal Government . . . *for the purposes of this suit* in which the TVA seeks to exercise the power of eminent domain it stands as an agency of and acts in the name of the United States." *Id.* (emphasis added).

The other two cases found a justiciable controversy arising out of a 1987 dispute between TVA and the Department of Energy (DOE) concerning DOE payments for electric power. The district court for the Eastern District of Tennessee, where TVA initially filed its claim for money damages, held that the suit was justiciable, although filed in the wrong court. *See Dean v. Herrington*, 668 F. Supp. 646, 653 (E.D. Tenn. 1987). The case was transferred to the Claims Court, which ruled that the dispute would be justiciable following completion of a mandatory dispute resolution process that the President had prescribed by Executive

Order. *TVA v. United States*, 13 Cl. Ct. 692, 700-02 (1987).[18] In *Dean*, the court suggested that *Nixon* had called into question the decision in *United States ex rel. TVA v. Easement & Right of Way* finding no justiciable controversy between TVA and FHA. Relying on *Nixon* and *United States v. Federal Maritime Commission*, 694 F.2d 793 (D.C.Cir. 1982), the court concluded that the relevant inquiry was, first, whether "the claim raised is of a type traditionally thought to be justiciable," and second, whether it is "raised in a setting that assures 'concrete adverseness' of the parties". *Dean*, 668 F. Supp. at 652. The court answered both questions in the affirmative, finding that the dispute was essentially a breach of contract claim, and that the adverseness of the parties was sharpened by TVA's "unique independence as a federal agency." *Id.*

The Claims Court agreed with the conclusion in *Dean* that the controversy was justiciable. It distinguished *United States ex rel. TVA v. Easement & Right of Way* on the ground that, *in the context of a condemnation suit*, TVA was statutorily required to take any real property in the name of the United States, but noted that, in all other contexts, TVA acquired property in its own name. *TVA*, 13 Cl. Ct at 697-98. The court agreed that *Nixon*'s focus on the nature of the controversy—whether it is of a kind that courts traditionally resolve, and whether the setting assures concrete adverseness—id entified the appropriate inquiry. *Id.* at 698-99, 94 S. Ct. 3090. It then noted that the dispute between TVA and DOE was not illusory; that TVA has a separate corporate identity and possesses the power to enter into binding contracts for the

[18] We discuss the effect of the executive orders on this case below.

provision of electric utility services; that it has the authority to sue for enforcement of its contracts; and that its litigation authority is independent of the Department of Justice. *Id.* at 699, 94 S. Ct. 3090.

We likewise believe that *Nixon* establishes a two-pronged case or controversy analysis in the context of intrabranch disputes. First, we must determine whether the issue is traditionally justiciable. Second, we must decide whether the setting of the dispute demonstrates true adversity between the parties. Applying that analysis here leads to the conclusion that this case presents a justiciable controversy. There can be little question that the issue presented is traditionally justiciable. The Clean Air Act explicitly provides for judicial review of final actions taken by the Administrator of the EPA. 42 U.S.C. § 7607(b). A privately-owned power generating facility would thus indisputably be entitled to petition for appellate review of a final order, and there is no reason to deny the same right to a federal facility. *See ICC*, 337 U.S. at 431, 69 S. Ct. 1410 (suggesting that the United States, in its capacity as a shipper, should be entitled to the same protections as a private shipper).[19] We are also convinced that the setting of this dispute presents concrete adversity. We note, as have previous courts, that TVA possesses unique independence as a federal agency. *See Dean*, 668 F. Supp. at 652 n. 1; *Algernon*

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[19] We assume there is a symmetry between TVA's right to petition for review and EPA's right to bring a judicial enforcement action against a federal agency to enforce a final order. EPA contends that it lacks the power to bring a judicial enforcement action against TVA. Initial Brief of Appellee at 48. However, we believe that, for the same reasons that TVA may obtain review of EPA's Order, EPA would be able to bring suit to enforce its Order.

Blair, 540 F. Supp. at 553 ("[O]ne of the reasons that TVA was set up as an independent corporation was to give it a greater degree of independence that was routinely enjoyed by governmental agencies."). Moreover, EPA and TVA advocate genuinely conflicting views, and the adversity is more than adequate to "sharpen[ ] the presentation of issues. . . . " *Nixon*, 418 U.S. at 697, 94 S. Ct. 3090.[20] We therefore find that this particular controversy between these executive branch agencies is justiciable.

D. Finality: Reviewability of the EAB Decision

EPA next argues that the EAB decision does not satisfy the criteria that must be met before an agency action is judicially reviewable. The CAA authorizes the filing of a petition for review in this Court from any "final action" of the administrator. It states, in relevant part, that "[a] petition for review of the Administrator's action [under certain specific provisions of the CAA], or any other final action of the Administrator . . . which is locally or regionally applicable may be filed only in the United States Court of Appeals for the appropriate circuit." CAA § 307(b)(1), 42 U.S.C. § 7607(b). The

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[20] As TVA points out, § 15d of the TVA Act requires TVA to finance its power program through sales of bonds backed solely by TVA's power revenues and through such revenues themselves. Section 15d(b) provides that such bonds "shall not be obligations of, nor shall payment of the principal thereof or interest thereon be guaranteed by, the United States." In addition, § 15d(f) directs TVA to charge rates that will produce gross revenues sufficient to enable it to meet all of its obligations, while at the same time keeping rates as low as feasible, and otherwise advancing the physical, economic, and social development of its area. TVA claims that the requirements that EPA has imposed in its order could cost TVA billions of dollars and compel TVA to raise its rates.

Supreme Court has interpreted the phrase "any other final action" to incorporate the finality requirement of the APA. *See Harrison v. PPG Industr., Inc.*, 446 U.S. 578, 586, 100 S. Ct. 1889, 64 L. Ed. 2d 525 (1980); *see also* 5 U.S.C. § 704 (APA finality requirement). In *Bennett v. Spear*, 520 U.S. 154, 117 S. Ct. 1154, 137 L. Ed. 2d 281 (1997), recently reaffirmed in *Whitman v. American Trucking Ass'ns, Inc.*, 531 U.S. 457, 121 S. Ct. 903, 149 L. Ed. 2d 1 (2001), the Supreme Court explained that two conditions must be satisfied in order for agency action to be "final" for purposes of appellate review: first, the action must mark the "consummation" of the agency's decision-making process; and second, it must "be one by which rights or obligations have been determined, or from which legal consequences will flow." *Bennett*, 520 U.S. at 177-78, 117 S. Ct. 1154 (citation and quotations omitted).

EPA argues that, under this two-prong test, the EAB decision is not reviewable agency action. While EPA admits that the EAB decision represents the "consummation" of its decision-making process in this case, thus satisfying the first prong, it argues that the second prong of the test cannot be met here, because, in its view, it could not bring a judicial enforcement action against TVA to enforce the EAB decision because of the lack of concrete adversity between two federal agencies. Suggesting that a judicial enforcement action is "intrinsic" to the second prong of *Bennett*, EPA states that TVA may not obtain judicial review of an action as to which EPA could never have recourse to judicial compulsion in the face of noncompliance by TVA.

We disagree for two reasons. First, as stated previously, we believe that there can be concrete adversity

between two executive branch agencies, and therefore we do not accept EPA's position that it would not be entitled to obtain judicial enforcement of the EAB decision against TVA. Second, we see no reason to assume that the second prong of the *Bennett* test requires the EAB decision to be judicially enforceable: it would seem to be satisfied as long as "rights or obligations have been determined." As EPA itself observes, "EPA expects that federal agencies will comply with its final orders. . . . " EPA Initial Br. at 48. That expectation suggests—and we agree— that an obligation has in fact been created. This satisfies the second prong of the *Bennett* test, and we therefore find that the EAB decision is a reviewable final order.[21]

E. The Effect of Executive Orders 12146 and 12088

EPA next argues that even if the EAB decision is potentially a reviewable final order, it is not yet ripe for review because the dispute has not been submitted to the Attorney General for resolution as required by Executive Order 12146, 3 C.F.R. 409 (1979), or to the Office of Management and Budget as required by

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[21] In challenging the finality of the ACO, EPA argued that its compliance orders were not "final," and therefore not reviewable, until it brought an enforcement action in the district court. While we are not persuaded that a compliance order may not be reviewed prior to an enforcement action, *see, e.g., Harrison v. PPG Industries, Inc.*, 446 U.S. 578, 586, 100 S. Ct. 1889, 64 L. Ed. 2d 525 (1980) (considering a decision of the EPA Administrator final because "[s]hort of an enforcement action, EPA has rendered its last word on the matter."); *State of Alaska v. EPA*, 244 F.3d 748, 750 (9th Cir. 2001); *Allsteel, Inc. v. EPA*, 25 F.3d 312, 315 (6th Cir. 1994), EPA's argument is undercut by its assertion that in this case it would not be able to bring an enforcement action against TVA.

Executive Order 12088, 3 C.F.R. 243 (1978). We must first consider whether these executive orders apply to TVA, and if so, what effect they have on our jurisdiction to consider the matter before us.

Executive Order 12146 (which also appears following 28 U.S.C. § 509) provides in relevant part:

> 1-401. Whenever two or more Executive agencies are unable to resolve a legal dispute between them, including the question of which has jurisdiction to administer a particular program or to regulate a particular activity, each agency is encouraged to submit the dispute to the Attorney General.
>
> 1-402. Whenever two or more Executive agencies whose heads serve at the pleasure of the President are unable to resolve such a legal dispute, the agencies shall submit the dispute to the Attorney General prior to proceeding in any court, except where there is specific statutory vesting of responsibility for a resolution elsewhere.

Citing *Dean v. Herrington*, 668 F. Supp. 646, 652-53 (E.D. Tenn. 1987), TVA first argues that this Executive Order does not apply to TVA at all. In *Dean*, the court suggested that the Executive Order, entitled "Management of Federal Legal Resources," was designed to "coordinate the legal resources of the numerous federal agencies represented in litigation by the Justice Department." *Id.* at 653. Since TVA has actual control of its litigation to the exclusion of the Attorney General, the court held that the Executive Order had no application. The court also observed that the Order created a "Federal Legal Council," but that "TVA was not one of the 15 initial members . . . nor is it claimed

by DOE that TVA has ever been a member. . . . " *Id.* at 652.

Dean's conclusion that the Executive Order does not apply to TVA was criticized in *TVA v. United States*, 13 Cl. Ct. 692 (1987). There, the claims court first noted that the membership of the Federal Legal Council "is not a listing of agencies that are subject to the order." *Id.* at 700. Second, the court disagreed with *Dean's* suggestion that the Order was intended to cover only those federal agencies without the power to represent themselves in litigation. For example, § 1-302(a) of the Executive Order provides that "[a]ll Agencies with authority to litigate cases in court shall promptly notify the Attorney General about those cases that fall in classes or categories designated from time to time by the Attorney General." *See also* § 1-301 (providing for notice of litigation covering "all civil litigation pending in the courts in which the Federal Government is a party or has a significant interest."). We are persuaded that the claims court has the better reading of the Order, and that on its face it does apply to TVA. "The district court's correct conclusion that TVA possesses independent litigation authority is not diminished by the fact that the Executive Order attempts to coordinate federal interagency litigation resources and to resolve disputes before court action is commenced." *TVA*, 13 Cl. Ct. at 700.

We are not persuaded by TVA's alternative argument that, because the CAA requires that "the person to whom [a compliance order] is issued" must have "had an opportunity to confer with the Administrator [of EPA] concerning the alleged violation" before the order may take effect, 42 U.S.C. § 7413(a)(4), there is a "specific statutory vesting of responsibility for a resolution

elsewhere," thus bringing this case within the exception specified in § 1-402 of the Executive Order. (TVA and EPA engaged in the required conference on December 20, 1999.) TVA points out that the Act defines a "person" to include agencies of the federal government, and contends that the conference provided for by the act is the statutory method provided by Congress for informal dispute resolution. According to TVA, therefore, by its own terms the Executive Order does not apply to this case.

But as EPA argues, § 7413(a)(4) does not create a dispute resolution mechanism like that established by executive order, "but merely provides that an order issued under that section shall not be final until the recipient has had an opportunity to confer with the Administrator." EPA's Reply to TVA's Opposition to EPA's Motion to Dismiss at 7. The CAA conference requirement simply provides EPA and TVA an opportunity to resolve the dispute on their own, but it is not a dispute resolution mechanism akin to that established by the Executive Order, because it does not provide for mediation or participation by a third party. The CAA conference requirement applies to any party, whether private or public, receiving a compliance order from EPA.[22] At such a conference, each party can be expected to present its own point of view. While the factors that will normally be considered at such a conference may overlap to some extent with factors that would be considered by the Attorney General evaluating a dispute between two federal agencies pursuant to the Executive Order, they are not identical. One purpose of review under the Executive Order, as

[22] The conference requirement obviously does not specifically contemplate a dispute between two federal agencies.

the court in *TVA* stated, is "to coordinate federal interagency litigation resources and to resolve disputes before court action is commenced." 13 Cl. Ct. at 700. Therefore the Attorney General, in his capacity as the executive branch official responsible for resolving the dispute, will take into account a broader range of factors—in particular, the coordination of federal interagency litigation resources—than EPA and TVA would consider in a conference between them alone. It is therefore likely that the purpose served by E.O. 12146 would be defeated if it could be circumvented by a fruitless private conference between TVA and EPA. Moreover, as EPA points out, since the text of the Order reflects a presumption that the agencies will first attempt to resolve the dispute between themselves, we do not think a conference between the two agencies alone constitutes a "specific statutory vesting of responsibility for a resolution elsewhere" that can supplant the requirement that they subsequently submit the dispute to the Attorney General. For the foregoing reasons, we conclude that the E.O. 12146 applies to TVA in this case.[23]

In addition to E.O. 12146, EPA has argued that Executive Order 12088 likewise applies in this case. That Order states, in relevant part:

> 1-602. The Administrator shall make every effort to resolve conflicts regarding [a CAA] violation between Executive agencies. . . . If the Admini-

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[23] TVA has also argued that it need not comply with the Order because to do so would be futile. For reasons discussed *infra*, we do not believe we should create exceptions to Executive Branch rules, and think that TVA's argument is best addressed to the Executive.

> strator cannot resolve a conflict, the Administrator shall request the Director of the Office of Management and Budget to resolve the conflict.

In reply, TVA relies on the fact that this Order was amended by Executive Order 12580, 3 C.F.R. 193 (1987), to add the following:

> Nothing in this Order shall create any right or benefit, substantive or procedural, enforceable at law by a party against the United States, its agencies, its officers, or any person.

TVA presumably understands EPA's reliance on the Order as a basis for delaying our review of its claim as an attempt to enforce a right or benefit at law. We disagree with this reading. EPA has argued that, as a result of the order, we lack jurisdiction to review TVA's petition at this stage. A challenge to our jurisdiction is not an attempt to enforce a right or benefit. Therefore, we also accept EPA's argument that E.O. 12088 applies to this case.

Having concluded that the orders apply, however, we are still left to decide their effect on the case. We find that the orders do not operate to deprive us of jurisdiction. EPA is free to seek a remedy for TVA's failure to comply within the Executive Branch. Indeed, there is no indication in the briefs and record before us that EPA itself has acted to comply with the executive orders. But E.O. 12088 is directed specifically to the EPA Administrator, not to the agency receiving the compliance order: "If the Administrator cannot resolve a conflict, the Administrator shall request the Director of the Office of Management and Budget to resolve the conflict." § 1- 602. Thus we find difficult to understand EPA's complaint that TVA has not complied with it.

Moreover, if EPA believed that the Attorney General, acting pursuant to E.O. 12146, could prevent or cut short this litigation, presumably there is nothing to prevent EPA from taking steps to submit the dispute to the Attorney General on its own.

The nature of EPA's argument is thus not that it has been unfairly deprived of recourse to Executive Branch dispute resolution mechanisms, but that we may not entertain TVA's petition *before* both parties have submitted the dispute to the requisite Executive Branch officials. Because this argument is a novel (or at least uncommon) one, we take some time to explain why we disagree.

We acknowledge at the outset that in *TVA* the claims court found that, in light of E.O. 12146, it was "altogether appropriate to dejudicialize the dispute and allow the Executive an opportunity to act." 13 Cl. Ct. at 701. Accordingly, it ordered the parties to submit their dispute to the Attorney General, allowing them to return to court if the administrative resolution proved unsatisfactory. *Id.* at 703. However, the court also found that the existence of the Executive Order did not render the controversy non- justiciable and thereby deprive the court of jurisdiction. *Id.* at 701 n. 9. It did not articulate the legal basis of its belief that it was "appropriate to dejudicialize the dispute"—whether its concern, in other words, lay in a lack of exhaustion of administrative remedies, or of ripeness, or was grounded in some other principle like separation of powers. We will consider these possibilities as a basis for suspending our review pending the outcome of internal Executive Branch procedures.

i. Exhaustion of Administrative Remedies

As a general matter, we have held that the exhaustion of administrative remedies requirement is not jurisdictional. *See, e.g., N.B. by D.G. v. Alachua County Sch. Bd.*, 84 F.3d 1376, 1379 (11th Cir. 1996); *Panola Land Buyers Ass'n v. Shuman*, 762 F.2d 1550, 1556 (11th Cir. 1985); *but see Gonzalez v. United States*, 959 F.2d 211, 212 (11th Cir. 1992) (holding that "exhaustion of administrative remedies is jurisdictional" in context where an administrative agency—the Bureau of Prisons—is responsible for computation of sentences). Of course, even where the lack of exhaustion does not create a jurisdictional bar, a court generally will not entertain the claim unless the unexhausted remedies are inadequate or futile. *See N.B. by D.G.*, 84 F.3d at 1379. Therefore, we must decide whether the executive orders at issue here present a traditional exhaustion requirement that either deprives us of jurisdiction or prevents our review for prudential reasons. We believe they do not.[24]

The executive orders cited by EPA are not on a par with a *statutorily* mandated exhaustion requirement, in which Congress has specifically precluded review of a claim before administrative remedies have been exhausted. In such cases, Congress has created the statutory scheme under which the right of judicial review is available in the first place, and so it has the power to specify at what point in the process the courts have jurisdiction over the claim. But the executive orders here do not operate pursuant to Congressional

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[24] We note initially a difference in form: traditional administrative remedies are available to one party against the agency. Here, the executive orders apply to both EPA and TVA, and thus EPA is complaining of TVA's failure to seek remedies it has not pursued either.

authority, nor are they a part of the statutory scheme—the CAA—under which TVA is seeking judicial review.[25] The Executive Branch does not confer the necessary jurisdiction on the courts in the first place, and thus we fail to see how an order governing the internal procedures of the Executive Branch could, in and of itself, operate to deprive this Court of jurisdiction if the parties satisfied the relevant *statutory* requirements for judicial review.

Nor do we believe that the executive orders give us reason to decline to exercise our jurisdiction. Insofar as it is a judicially developed doctrine, the exhaustion requirement exists "1) to permit the exercise of agency discretion and expertise on issues requiring these characteristics; 2) to allow the full development of technical issues and a factual record prior to court review; 3) to prevent deliberate disregard and circumvention of agency procedures established by Congress; and 4) to avoid unnecessary judicial decisions by giving the agency the first opportunity to correct any error." *Id.* at 1378-79. We do not believe that any of these considerations are relevant here; and none of them is implicated by the executive orders. As EPA concedes, were TVA a private party, all administrative remedies would be exhausted at this stage. Having already conducted a review of its compliance order and issuing the EAB decision, EPA cannot argue that it has not had the opportunity to exercise its discretion and expertise, or to develop the factual record, or to correct any errors. And TVA's failure to comply with Execu-

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[25] They are therefore unlike the case in which the head of an agency—an Executive Branch official—may determine what constitutes exhaustion in the context of a statutory scheme requiring it.

tive Order 12146 does not amount to a "disregard and circumvention of agency procedures established by Congress."

Of course, the exhaustion doctrine also reflects a concern with judicial efficiency. "A complaining party may be successful in vindicating his rights in the administrative process. If he is required to pursue his administrative remedies, the courts may never have to intervene." *McKart v. United States*, 395 U.S. 185, 195, 89 S. Ct. 1657, 23 L. Ed. 2d 194 (1969). It is possible that, were EPA and TVA to avail themselves of the dispute resolution mechanisms established by either of the two executive orders, it would obviate the need for judicial review of the controversy. But we do not believe that to require EPA and TVA to do so would give the Executive Branch an opportunity to head off this litigation that does not otherwise exist. Since both EPA's Administrator and TVA's board serve at the pleasure of the President, the President could bring this litigation to a close on his own initiative at any point. He has not done so. Without more than a remote possibility that compliance with the executive orders would resolve the dispute, we do not believe the failure to exhaust those remedies erects any barrier to our review of EPA's order to TVA.

ii Ripeness

Closely related to the exhaustion doctrine—at least in this context—is the notion of ripeness, which is "drawn both from Article III limitations on judicial power and from prudential reasons for refusing to exercise jurisdiction." *Reno v. Catholic Soc. Serv., Inc.*, 509 U.S. 43, 58 n.18, 113 S. Ct. 2485, 125 L. Ed. 2d 38 (1993). Thus, like a lack of exhaustion, the lack of ripe-

ness will not always operate to deprive a court of jurisdiction, but "[p]roblems of prematurity and abstractness may well present 'insuperable obstacles' to the exercise of the Court's jurisdiction, even though that jurisdiction is technically present." *Socialist Labor Party v. Gilligan*, 406 U.S. 583, 588, 92 S. Ct. 1716, 32 L. Ed. 2d 317 (1972) (citation omitted). In *Abbott Laboratories v. Gardner*, the Court explained the ripeness doctrine as follows:

> [I]ts basic rationale is to prevent the courts, through avoidance of premature adjudication, from entangling themselves in abstract disagreements over administrative policies, and also to protect the agencies from judicial interference until an administrative decision has been formalized and its effects felt in a concrete way by the challenging parties. The problem is best seen in a twofold aspect, requiring us to evaluate both the fitness of the issues for judicial decision and the hardship to the parties of withholding court consideration.

387 U.S. 136, 148-49, 87 S. Ct. 1507, 18 L. Ed. 2d 681 (1967).

So understood, we do not believe the ripeness doctrine prevents our review of the petitions in this case. Ripeness is concerned principally with the development of the legal or factual issues before the court. By EPA's own admission, the EAB decision represents the culmination of its decision-making process, and there is nothing abstract about the conflict between TVA and EPA. The fact that TVA is an agency subject to the executive orders does not render the legal and factual issues in this controversy any less developed than they would be if TVA were a private party, and therefore

the executive orders do not create any additional ripeness problem.[26] We find that the issues presented here are fit for judicial decision.

iii Separation of Powers

The final possibility is that, out of a respect for the principle of separation of powers, we should abstain from exercising our jurisdiction at least until the Executive Branch has had an opportunity to employ its own dispute resolution mechanisms. After all, neither E.O. 12088 nor E.O. 12146 precludes eventual recourse to the courts;[27] rather, they indicate that agencies should use internal Executive Branch procedures *first.* Therefore—the argument goes—by declining to review the controversy until they have done so, we would simply be showing a due regard for the functions and procedures of the Executive Branch.

While this argument is not without some appeal, ultimately we are not persuaded. We note, as an initial matter, that our review of TVA's petition before it has complied with the executive orders would not intrude on Executive Branch functions in such a way as to be *constitutionally* impermissible under the separation of powers doctrine. One branch violates the constitutional separation of powers only when it prevents another

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[26] Nor do the executive orders mean that the effects of EPA's order are not "felt in a concrete way" by TVA. EPA has not stayed the implementation of its order pending any Executive Branch dispute resolution mechanisms.

[27] E.O. 12146 states only that "the agencies shall submit the dispute to the Attorney General *prior to proceeding in any court,*" § 1-104 (emphasis added), and E.O. 12088 states in § 1-604 that "[t]hese conflict resolution procedures are in addition to, not in lieu of, other procedures, including sanctions, for the enforcement of applicable pollution control standards."

"from accomplishing its constitutionally assigned functions," and the interference with the other branch is not "justified by an overriding need to promote objectives" within its own constitutional authority. *Nixon v. Adm'r of Gen. Serv.*, 433 U.S. 425, 443, 97 S. Ct. 2777, 53 L. Ed. 2d 867 (1977). Evaluating the merits of TVA's petition at this stage would not interfere in any way with executive functions. As we noted earlier, the President has possessed the power at all points in this process to control or head off the litigation, and may still do so if he wishes. Accordingly, our review of the controversy does not diminish, or prevent the exercise of, presidential authority over the parties.

In the absence of a constitutional separation of powers problem, our decision to postpone review of this case would have to be based on a new incarnation of the doctrine of judicial abstention: although we possess statutory power to hear TVA's claims, we would nonetheless abstain from doing so out of respect for the Executive's clear indication that its agencies should employ that branch's own procedures before proceeding to court. Two considerations counsel against our adopting such a position. First, the Executive has the ability to enforce its own internal procedural rules. Even now, were the President to conclude that TVA was before this Court in violation of Executive Branch operating procedures, he could act to head off the litigation. A due regard for the Executive may thus counsel us to leave the enforcement of its internal rules to its own discretion. Second, our review of TVA's petition takes place pursuant to statutory authority. Congress has specified the conditions under which we should review a claim such as that brought by TVA, *see* 42 U.S.C. § 7607(b), and we have determined that those

conditions are satisfied here. Therefore, separation of powers considerations do not clearly recommend abstention: they may equally recommend our hearing TVA's claim now, when Congress has indicated that we should do so.

In sum, then, we find that under existing doctrines, the executive orders provide us with no compelling reason to decline to exercise our jurisdiction.

F. Standing of Private Petitioners

Even if the other jurisdictional challenges raised by EPA are without merit, EPA argues that the petitions brought by APC, Duke, and TVPPA et al. must be dismissed for lack of standing because the private petitioners cannot show a legally cognizable injury, caused by EPA, that can be redressed by this Court. It contends that the injuries alleged by the private petitioners are highly speculative—resulting, if at all, from decisions made by TVA in order to comply with EPA's orders—and that none of the interests the private petitioners seek to protect—relating to their right to reliable, low-cost electricity supplied by TVA—is within the "zone of interests" protected by the CAA.

In order to have standing under the case or controversy requirement of Article III, a plaintiff must establish three elements: (a) injury in fact—that is, a harm that is concrete and particularized, and actual or imminent, not conjectural or hypothetical; (b) a causal connection between the plaintiff's harm and the defendant's conduct; and (c) a likelihood that the requested relief will redress the alleged injury. *Steel Co. v. Citizens for a Better Environment*, 523 U.S. 83, 103, 118 S. Ct. 1003, 140 L. Ed. 2d 210 (1998); *see also Lujan v.*

Defenders of Wildlife, 504 U.S. 555, 560-62, 112 S. Ct. 2130, 119 L. Ed. 2d 351 (1992); *Georgia State Conference of NAACP Branches v. Cox*, 183 F.3d 1259, 1262-63 (11th Cir. 1999). It is undisputed in this case that EPA's orders do not apply directly to any of the private petitioners. When a plaintiff's asserted injury arises from the government's allegedly unlawful regulation of someone else,

> causation and redressability ordinarily hinge on the response of the regulated (or regulable) third party to the government action. . . . The existence of one or more of the essential elements of standing "depends on the unfettered choices made by independent actors not before the courts and whose exercise of broad and legitimate discretion the courts cannot presume either to control or to predict," and it becomes the burden of the plaintiff to adduce facts showing that those choices have been or will be made in such manner as to produce causation and permit redressability of injury.

Lujan, 504 U.S. at 562, 112 S. Ct. 2130 (citations omitted). While this situation does not preclude a finding that the plaintiff has standing, "it is ordinarily 'substantially more difficult' to establish." *Id.* (citation omitted). We begin with a discussion of Alabama Power and Duke, who allege largely identical injuries, and then consider the standing of TVPPA.

i. Alabama Power Company and Duke Energy Corporation

APC and Duke allege that they will be injured by EPA's orders to TVA in four ways. First, they state that, since their electric transmission networks are fully integrated with TVA's and power plant output and

availability on the TVA system directly affects power flow and plant output on their own systems, any disruption to TVA's system will have a direct impact on their own. In particular, they contend that the orders prohibit TVA from engaging in maintenance, repair and replacement projects at its power plants that are necessary to maintain sufficient reserves against unplanned contingencies, which will require APC and Duke to increase production at their own plants to preserve the reliability of the regional power supply. Second, they contend that they will be unlawfully excluded from the process whereby, under the terms of the ACO, EPA will set a schedule for the shut down of TVA's coal-fired power plants, and that the shut down schedule will have a substantial impact on their own generation and transmission system. Third, APC points out that it currently has contractual rights to a substantial amount of TVA power, and claims that the orders will interfere with TVA's ability to meet its power supply responsibilities, which will require APC to incur greater costs from the employment of risk management and hedging techniques. Duke similarly claims that one of its subsidiaries has purchased more than $55 million of electric power from TVA and that the costs imposed by EPA's orders will increase the cost of power charged to TVA customers, including Duke's subsidiary. Finally, EPA has also sued APC and issued a Notice of Violation to Duke Energy for violations of the CAA similar to those it alleges against TVA. APC and Duke argue that EPA is highly likely to use the TVA orders in its case against them, which gives them a substantial interest in seeking their review by this Court. They add that judicial economy is served by testing the orders at this stage, before EPA attempts to use it in civil actions against other electric utilities.

EPA argues that claims of economic injury based on the assumption that the costs of TVA's compliance with EPA orders will be passed on to its ratepayers are too speculative to create standing. According to EPA, TVA could decide to cover the costs of compliance through other means—for example, by issuing debt, or by reallocating its resources. In response, APC and Duke point to *Central Arizona Water Conservation District v. EPA*, 990 F.2d 1531, 1538 (9th Cir. 1993), in which the Ninth Circuit found that third parties potentially harmed by agency action had standing to sue. In *Central Arizona*, EPA issued a rule under the CAA that required reduction of emissions from a power plant. In response, local water conservation districts that used electricity from the plant brought an action contesting the rule, claiming they would be injured economically due to a contractual relationship with one of the owners of the plant that would require them to help pay a portion of the costs of installing and maintaining the emissions controls. *Id.* at 1534. However, in the present case, APC and Duke are not contractually bound to share in TVA's costs, so the economic injury is more uncertain than it was in *Central Arizona*. But while APC's and Duke's claim of injury based on increased electricity costs presents a close question, we believe other grounds it asserts are sufficient to confer standing.

For example, we find less speculative APC's and Duke's claim that, due to the interconnectedness of their electric transmission networks with TVA's, they will be required to increase production to compensate for uncertainties and diminished reserves created by TVA's compliance with EPA's orders. APC and Duke have submitted expert declarations in support of this

claim; moreover, we note that "[a]t the pleading stage, general factual allegations of injury resulting from the defendant's conduct may suffice, for on a motion to dismiss we 'presum[e] that general allegations embrace those specific facts that are necessary to support the claim.'" *Lujan*, 504 U.S. at 561, 112 S. Ct. 2130. Therefore, we believe APC and Duke have adequately alleged injury sufficient to confer standing.[28]

We also believe that there is "a fairly traceable connection between the plaintiffs' injury and the complained-of conduct of the defendant." *Steel Co.*, 523 U.S. at 103, 118 S. Ct. 1003. It is TVA's compliance with EPA's orders that will result in diminished reserves imposing greater costs on APC and Duke. EPA objects that there are "countless ways that TVA could effectuate compliance," and that any effect on APC and Duke is caused by TVA's choices rather than by EPA's orders. However, the Supreme Court rejected a similar argument in *Bennett v. Spear*, stating: "This wrongly equates injury 'fairly traceable' to the defendant with injury as to which the defendant's actions are the very last step in the chain of causation." 520 U.S. 154, 168-69, 117 S. Ct. 1154, 137 L. Ed. 2d 281 (1997). The Court recognized that while the injury should not be the result of the independent action of

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[28] Accordingly, we need not reach APC's and Duke's other claims of standing. However, we note that we are not persuaded by EPA's contention that this case does not bear on its claims against APC. While there are doubtless factually specific inquiries that must be conducted in each case, legal questions concerning EPA's interpretation of "routine" and its method for evaluating emissions increases are common to both cases. On the other hand, we find unpersuasive APC's and Duke's claim of injury based on their potential exclusion from participating in the formulation of TVA's compliance schedules.

some third party not before the court, "that does not exclude injury produced by determinative or coercive effect upon the action of someone else." *Id.* at 169, 117 S. Ct. 1154.

EPA argues that, as to the third prong of the standing inquiry, an order of this Court would not redress the alleged injury because a multitude of factors contributes to TVA's ability to supply power to the interconnected systems. We think the fact that something else could conceivably disrupt TVA's power generating capacity is insufficient to justify a conclusion that this Court could not redress the injury. While redressability must not be speculative, it need only be "likely," not certain. *Lujan*, 504 U.S. at 561, 112 S. Ct. 2130. "[A] probabilistic benefit from winning a suit is enough 'injury in fact' to confer Article III standing in the undemanding Article III sense." *North Shore Gas Co. v. E.P.A.*, 930 F.2d 1239, 1242 (7th Cir. 1991) (internal citations omitted). We are satisfied that this Court has the power to redress the alleged injury.

In addition to satisfying the constitutional standing requirements, a plaintiff must also satisfy certain prudential standing requirements. In particular, a party's complaint must fall within the "zone of interests" protected or regulated in the statutory provision at issue. *Valley Forge Christian Coll. v. Americans United for Separation of Church and State, Inc.*, 454 U.S. 464, 475, 102 S. Ct. 752, 70 L. Ed. 2d 700 (1982); *see also Region 8 Forest Serv. Timber Purchasers Council v. Alcock*, 993 F.2d 800, 805 (11th Cir. 1993). EPA argues that none of the interests the private petitioners seek to protect are within the zone of interests protected by the CAA.

The test articulated by the Supreme Court and applied in this Circuit to determine if the private petitioners' claims are within the "zone of interests" is as follows:

> In cases where the plaintiff is not itself the subject of the contested regulatory action, the test denies a right of review if the plaintiff's interests are so marginally related to or inconsistent with the purposes implicit in the statute that it cannot reasonably be assumed the Congress intended to permit the suit. The test is not meant to be especially demanding; in particular, there need be no indication of congressional purpose to benefit the would-be plaintiff.

Clarke v. Sec. Indus. Ass'n, 479 U.S. 388, 399-400, 107 S. Ct. 750, 93 L. Ed. 2d 757 (1987); *FDIC v. Morley*, 867 F.2d 1381, 1391 (11th Cir. 1989).

The purpose of the CAA is "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." 42 U.S.C. § 7401(b)(1). In directing EPA to promulgate air quality standards, Congress instructed the agency to take into consideration "any adverse public health, welfare, social, economic or energy effects which may result from various strategies for attainment and maintenance of such national ambient air quality standards." 42 U.S.C. § 7409(d)(2). We believe that the issues raised by APC and Duke regarding the reliability and affordability of the power supply are concerns that touch on Congress' purposes in enacting the CAA. Accordingly, we find

that they do not lack standing to seek review of EPA's orders in this Court.[29]

ii Tennessee Valley Public Power Association[30]

TVPPA is a nonprofit corporation representing the interests of 110 municipal and 50 rural electric cooperative distributors of electrical power. All but one of these municipal and cooperative electrical systems distribute and sell power purchased from TVA to residents and businesses of the TVA area. They have long-term wholesale power and supply contracts with TVA that require each system to purchase all of its requirements of energy and capacity from TVA. Under these requirements contracts, TVA has the right to adjust or change wholesale and retail rates during the term of the contract. TVPPA therefore contends that its member systems would ultimately be responsible for paying for most of the increases in TVA's costs resulting from EPA's order. It also states that 109 of its members are municipal governments that buy energy and capacity from TVA, and that these communities will suffer an economic disadvantage compared to other communities due to the higher power costs that will result from the compliance order. TVPPA's claimed injury is thus the increased cost of electricity that its members will be forced to pay and

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[29] EPA cites *Dean*, 668 F. Supp. at 653-54, in which the court found that TVPPA was not within the "zone of interests" of either of the statutes that TVPPA cited as authority to bring suit, and therefore held it lacked standing. However, *Dean* did not involve an action under the CAA, so its analysis is not relevant to the present case.

[30] EPA did not specifically challenge the standing of Memphis Light et al. to pursue 00-16235; therefore, we will not separately address the standing of those entities.

the economic disadvantage that its member municipal governments will suffer through increased rates.

As an association suing in its representational capacity, TVPPA must satisfy additional requirements, beyond demonstrating the constitutional prerequisites to standing, in order to have standing to assert the claims of its members. TVPPA must also show that (a) its members would otherwise have standing to sue in their own right; (b) the interests it seeks to protect are germane to TVPPA's purpose; and (c) neither the claim asserted, nor the relief requested, requires the participation of individual members in the law suit. Hunt v. Washington State Apple Advertising Comm'n, 432 U.S. 333, 342-43, 97 S. Ct. 2434, 53 L. Ed. 2d 383 (1977); *see also Doe v. Stincer*, 175 F.3d 879, 882 (11th Cir. 1999). TVPPA therefore must establish that at least one of its members meets all three requirements for standing under Article III.

Like APC and Duke, TVPPA also cites *Central Arizona* in support of its contention that the increased cost of electricity its members will likely have to pay as a result of EPA's compliance order satisfies the actual injury requirement. But again, the situation here is somewhat different. In *Central Arizona*, the plaintiff claimed that it was "contractually required to repay much of [one of the plant owner's] 24.3% share of the costs of installing and maintaining emission controls . . . as required by the Final Rule." 990 F.2d at 1537. TVPPA does claim that its members "will be required under the terms of their all-requirements contracts with TVA to pay for the increased rates," but this appears to mean only that they have contracts with TVA under which TVA is entitled to increase its rates. Thus, the question of standing is somewhat closer here

than it was in *Central Arizona*. Nonetheless, we think that business realities make it likely that TVPPA's members can expect *some* rate increases as a result of EPA's order, a point that EPA apparently concedes.[31] As the court stated in *Central Arizona*, the EPA order "will likely cause Petitioners *some amount* of pecuniary harm," *id.* at 1538, and that is sufficient to confer standing. Moreover, for the reasons stated in our discussion of APC and Duke, we believe the causation, redressability, and prudential standing requirements are satisfied here.[32]

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[31] EPA writes: "EPA estimates, using general information based on past industry costs and practices, that actual potential impact on TVA's rates would be no more than a 3% increase, if any." EPA Reply to Petitioners' Opposition to Motion to Dismiss at 21.

[32] Therefore, we need not reach TVPPA's second standing argument. However, we note that TVPPA cites *Southwestern Pennsylvania Growth Alliance v. Browner*, 144 F.3d 984 (6th Cir. 1998), in which the court found that an organization of major manufacturers and governments in Pennsylvania had standing to challenge an order by the EPA designating a geographical area in Ohio as an attainment area for ozone. This designation enabled Ohio business to pay less for ozone controls than the Pennsylvania government and businesses were required to pay for non-attainment areas. The court wrote: "If the EPA incorrectly redesignated the Cleveland-Akron- Lorain area as attainment, then that area has an economic advantage over its neighbors in southwestern Pennsylvania because businesses in the Ohio area unfairly pay less for ozone control measures. Thus, the southwestern Pennsylvania area, which is designated as nonattainment, suffers an economic disadvantage compared to its Ohio neighbor. This economic disadvantage is an alleged 'injury in fact' directly caused by the EPA's decision, an injury that would be redressed if the decision were overturned by this Court." *Id.* at 988.

CONCLUSION

For the foregoing reasons, we conclude that we possess subject matter jurisdiction to review the petitions filed in this case. By separate Order, oral argument will be scheduled on the merits involved in this appeal.

APPENDIX C

BEFORE THE ENVIRONMENTAL APPEALS BOARD UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C.

Docket No. CAA-2000-04-008
CAA Docket No. 00-6

In re: Tennessee Valley Authority

[Decided September 15, 2000]

FINAL ORDER ON RECONSIDERATION

Before Environmental Appeals Judges SCOTT C. FULTON, RONALD L. MCCALLUM, and KATHIE A. STEIN

I. *INTRODUCTION*

This proceeding involves allegations by the Region that TVA violated the CAA when it made certain changes to nine of its coal-fired electric power generating plants without first obtaining preconstruction permits from either the EPA or, where applicable, the appropriate State or local agency. The CAA's permitting requirements are intended, among other things, to assure that pollution sources use appropriate controls to limit the emission of pollutants into the atmosphere. All of TVA's coal-fired power plants at issue in this proceeding were originally designed and

built before the CAA was amended in 1977 to require persons who own or operate certain facilities that are sources of pollutant emissions to obtain preconstruction permits.

When Congress enacted the CAA in 1970, and subsequently when it amended the Act in 1977, Congress determined that existing pollution sources would be "grandfathered"—in other words, existing sources would not be required immediately to install the pollution controls the Act requires for new sources of air pollution. Congress, however, did not intend these sources to remain permanently exempt from the CAA's pollution control requirements. Instead, Congress provided that existing sources would become subject to the CAA's requirements when these sources are "modified."[1] As explained by the Seventh Circuit, "[t]he purpose of the 'modification' rule is to ensure that pollution control measures are undertaken when they can be most effective, at the time of new or modified construction." *Wisconsin Elec. Power Co. v. Reilly*, 893 F.2d 901, 909 (7th Cir. 1990) (citation omitted) ("*WEPCO*"). By this structure of initially allowing grandfathering of existing sources but requiring those sources to comply with the CAA's pollution control requirements upon modification, Congress in effect balanced the competing concerns with regard to the inconvenience and cost of retrofitting existing plants with modern pollution controls and the harm to the nation's air quality from unabated air pollution.

Shortly after the enactment of the 1977 amendments to the CAA, the U.S. Circuit Court for the District

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[1] The precise terms of the CAA are discussed below in Part III.B.

of Columbia characterized the relationship between grandfathering and modification as follows:

> Implementation of the statute's definition of "modification" will undoubtedly prove inconvenient and costly to affected industries; but the clear language of the statute unavoidably imposes these costs except for de minimis increases. The statutory scheme intends to "grandfather" existing industries; but the provisions concerning modifications indicate that this is not to constitute a perpetual immunity from all standards under the PSD [prevention of significant deterioration] program.

Alabama Power Co. v. Costle, 636 F.2d 323, 400 (D.C. Cir. 1980) ("*Alabama Power*").[2] The Region's allegations that TVA violated the CAA when it made changes to nine of its coal-fired electric power generating plants without obtaining preconstruction permits requires us to decide whether those changes were "modifications" for which TVA was required to obtain preconstruction permits or, alternatively, whether the particular generating units remain "grandfathered" and thus exempt from these requirements. The answer to this question has great significance for the parties and the environment, for it determines whether or not TVA was required to install pollution control technology to minimize its emissions and comply with other requirements of the Act when it made changes to its plants.

The term "modification" is a key term used in the CAA to identify when a source owner or operator must comply with one or more of the preconstruction per-

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[2] The "PSD program" refers to one of the preconstruction permitting programs created by the CAA. The PSD program is implicated in this case and will be explained more fully below.

mitting programs created by the CAA. There are a wide array of preconstruction permitting programs that have been developed under the CAA's authority. The precise permitting requirements applicable to a particular project vary depending upon several factors, including which program applies, the air quality at the source's location, whether the permitting program is identical to the federal program or contains different provisions incorporated from state or local law, and the year in which any alleged changes were made. TVA's coal-fired electric power generating plants at issue in this case are located in the states of Alabama, Kentucky and Tennessee, and within the jurisdiction of one local permitting agency, Memphis/Shelby County, Tennessee. TVA made the alleged changes at its plants at different times between 1982 and 1996. A detailed discussion of the technical aspects of the requirements applicable to each of TVA's coal-fired units, and the changes made to those units, is provided below in Part III of this decision. Here, we provide a brief summary by way of introduction.

The rules that apply are those of EPA in effect at the applicable time, unless the State had obtained approval from EPA of its preconstruction permitting program prior to the particular change at issue, in which case the applicable rules are those of the State or local agency. Approved state programs are known as "state implementation plans" or "SIPs." The permitting requirements of the federal programs, as well as the permitting requirements of the Alabama, Kentucky, and Tennessee SIPs, are at issue in this case.

The types of required preconstruction permits generally fall into two categories, known as prevention of significant deterioration ("PSD") permits applicable

in areas with air quality that is unclassifiable or is better than the national ambient air quality standards ("NAAQS"), and nonattainment new source review ("nonattainment NSR") permits applicable in areas with air quality that fails to meet the NAAQS. In the states involved in this case, a third type of permit may be required, known as a "minor" NSR permit, which applies in both attainment and nonattainment areas.

Although the specific requirements of the various NSR preconstruction permitting programs differ,[3] a number of general features are common to all programs. The determination under the various regulatory programs of whether the source owner or operator must obtain a permit before making a change to the source is derived from the statutory definition of the term "modification." Generally, the statutory standard requires consideration of two issues: (1) whether there was a "physical change" made to the unit, and (2) whether there was an increase in the emissions of particular pollutants that results from the physical change. The regulations for the various state and federal permitting programs interpret and elaborate upon the statutory definition of "modification" by both excluding certain types of changes from the permitting requirements and by establishing requirements for determining when the change results in an emissions increase. Of particular significance for this case, the regulations typically exclude "routine maintenance, repair, and replacement" from the permitting requirements.

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[3] New source review covers both new and modified sources, as discussed below.

As explained below, the Region alleges in the Compliance Order that TVA made "physical changes" to coal-fired generating units located at nine of its plants and that those physical changes resulted in emissions increases sufficient to trigger the applicable permitting requirements. The Compliance Order also alleges that none of the physical changes at issue fall within the exception for routine maintenance, repair, and replacement. TVA raises a variety of objections to the Compliance Order, including that the particular changes at issue fall within the exception for routine maintenance, repair, and replacement and that EPA Enforcement has failed to show that the changes resulted in emissions increases sufficient to trigger the permitting requirements. In evaluating the parties' arguments and in applying the technical requirements of the regulations to the facts of this case, we shall frequently refer to the observations of the U.S. Circuit Court for the District of Columbia in *Alabama Power* and the Seventh Circuit in *WEPCO* as noted above.

This decision will address the issues raised by the parties in the following order. We will begin by providing background information regarding projects that are at issue in this case (Part II.A). We will also briefly summarize the procedural history of this reconsideration proceeding (Part II.B). In order to provide context for our legal discussion in Part III, we begin our discussion with a brief summary of our decision (Part III.A). As will be discussed, this reconsideration process has provided TVA with an opportunity to be heard regarding the factual and legal bases for the Compliance Order. In the course of this process EPA Enforcement has abandoned a number of the allegations in the Compliance Order. In addition, we also

determine, as discussed below, that EPA Enforcement has not proven a number of other alleged violations on the record of this case. In these respects, the Compliance Order must be vacated in part. In other respects, we find that EPA Enforcement has proven the alleged violations by a preponderance of the evidence and that the Compliance Order must be sustained.

In our substantive discussion of the legal issues that follows the summary of our decision, we will begin by providing a more detailed discussion of the relevant provisions of the CAA, with particular emphasis on the provisions authorizing state SIPs and the requirements for PSD and nonattainment NSR permitting programs, as well as the statutory definition of "modification" (Part III.B). Second, we will discuss the "physical change" requirement and TVA's arguments that the changes it made were within the scope of the "routine maintenance, repair, and replacement" exception (Part III.C). Third, we will discuss the applicable regulatory requirements for determining whether a particular physical change has resulted in an increase in emissions of a particular pollutant (Part III.D).

Next, we will turn to the parties' arguments regarding whether the changes TVA made to one of the units, Colbert Unit 5, subject that unit to the requirements of the new source performance standard ("NSPS") program, a related pollution control program, and whether TVA operated Colbert Unit 5 in violation of the NSPS standard (Part III.E). Then we will consider whether TVA violated the "minor" NSR permitting requirements of the Alabama and Tennessee SIPs (Part

III.F).[4] Finally, we will consider the parties' arguments regarding whether the relief required by the Compliance Order exceeds the Agency's authority under the CAA (Part III.G).

II. *BACKGROUND*

A. *TVA's Projects*

TVA is an agency of the United States Federal Government that was created by the Tennessee Valley Authority Act of 1933, as amended. 16 U.S.C. §§ 831-831dd. One of TVA's responsibilities is the generation, transmission, and sale of electrical power. TVA owns and operates a system that supplies power to approximately eight million people in an 80,000 square-mile area comprising portions of seven states.

TVA owns and operates eleven coal-fired electric power generating plants, many of which contain more than one generating unit. Most of TVA's power plants were built between the early 1950s and the early 1970s. Fourteen projects at nine of TVA's coal-fired power plants are at issue in this case. The particular power plants that are at issue, the date of their original construction, the generating units (identified by unit number) at such plants, and the dates of the alleged modification are as follows:

- *Allen Plant Unit 3.* This unit is a 330-Megawatts ("MW") coal-fired steam boiler located in Shelby County, Tennessee, which commenced

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[4] Although the Region originally alleged that the changes to TVA's Kentucky plants violated the Kentucky minor NSR permitting requirements, EPA Enforcement has abandoned those claims in its post-hearing briefs. *See infra* Part III.A.

commercial operation in 1959. Construction of the alleged physical changes at Unit 3 that are at issue in this proceeding was commenced in late 1992 and completed in early 1993.

- *Paradise Units 1, 2, and 3.* Each of the Units 1 and 2 is a 770-MW coal-fired steam boiler located in Drakesboro, Kentucky, which began commercial operation in 1963. Construction of the alleged physical changes at Unit 1 that are at issue in this proceeding was commenced and completed in 1985. Construction of the physical changes at Unit 2 that are at issue in this proceeding was commenced in late 1985 and completed in early 1986. Paradise Unit 3 is a 1150-MW coal-fired steam boiler also located in Drakesboro, Kentucky. It began commercial operation in 1970. Construction of the alleged physical changes at Unit 3 that are at issue in this proceeding was commenced in late 1983 and completed in early 1985.

- *Bull Run Unit 1.* This unit is a 900-MW coal-fired steam boiler located near Clinton, Anderson County, Tennessee, which commenced commercial operation in 1967. Construction of the alleged physical changes that are at issue in this case was commenced and completed in 1988.

- *Colbert Unit 5.* This unit is a 500-MW coal-fired steam boiler located in Tuscumbia, Alabama. It began commercial operation in 1965. Construction of the alleged physical changes at Unit 5 that are at issue in this proceeding was commenced in February 1982 and completed in March 1983.

- *Cumberland Unit 1 and Unit 2.* Each unit is a 1300-MW coal-fired steam boiler located near Cumberland City, Tennessee, which commenced commercial operation in 1973. Construction of the alleged physical changes at Unit 1 that are at issue in this proceeding was commenced and completed in 1996. Construction of the alleged physical changes at Unit 2 that are at issue in this proceeding was commenced and completed in 1994.
- *John Sevier Unit 3.* This unit is a 135-MW coal-fired steam boiler located near Rogersville, Hawkins County, Tennessee. It began commercial operation in 1956. Construction on the alleged physical changes that are at issue in this proceeding was commenced and completed in 1986.
- *Kingston Unit 6 and Unit 8.* Each unit is a 200-MW coal-fired steam boiler located near Kingston, Roane County, Tennessee. Both units began commercial operation in 1955. Construction of the alleged physical changes at Unit 6 that are at issue in this proceeding was commenced and completed in 1989. Construction of the alleged physical changes at Unit 8 that are at issue in this proceeding was commenced in late 1989 and completed in early 1990.
- *Shawnee Unit 1 and Unit 4.* Each unit is a 175-MW coal-fired steam boiler located in McCracken County, Kentucky, which began commercial operation in 1953. Construction of the alleged physical changes at Unit 1 that are at issue in this proceeding was commenced in

1989 and completed in 1990. Construction of the alleged physical changes at Unit 4 that are at issue in this proceeding was commenced and completed in 1990.

- *Widows Creek Unit 5.* This unit is a 141-MW coal-fired steam boiler located in Jackson County, Alabama, which began commercial operation in 1954. Construction of the alleged physical changes at issue in this proceeding was commenced in late 1989 and completed in early 1990.

B. *Procedural Background*

1. *The Issuance of the Compliance Order and Initial Consultation Between the Region and TVA*

The Region originally issued the Compliance Order on November 3, 1999.[5] The Region amended the Compliance Order several times, with a substantial amendment and restatement on April 10, 2000. The amendments to the Compliance Order made in April 2000 added more detailed findings, but did not change the central conclusion that TVA violated the CAA with respect to physical changes made to nine of its coal-fired electric power plants.

In particular, the Compliance Order, as amended, found that TVA violated the CAA when it made certain

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[5] Prior to the issuance of the original Compliance Order, EPA Enforcement sent TVA a letter dated July 9, 1999, alleging that TVA had violated the CAA when it performed various replacement projects at its plants without the appropriate NSR permits. In this letter, EPA Enforcement requested a meeting with representatives of TVA to discuss these allegations. *See* TVA Response to Initial Brief, Ex. V.

physical changes to fourteen of the boiler units at nine of its power plants without having first obtained permits under the CAA authorizing TVA to commence construction or modification of the plants. The Compliance Order found that TVA thus violated the CAA's PSD, nonattainment NSR, and NSPS requirements.

The Compliance Order also directed TVA to undertake certain actions to come into compliance with the CAA. In particular, the Compliance Order required TVA to undertake the following specific actions: (1) provide a detailed schedule for achieving compliance with all PSD and nonattainment NSR requirements; (2) provide a schedule for achieving compliance with the NSPS for those units found to be in violation of those requirements; (3) enter into a Federal Facilities Compliance Agreement; (4) submit, to the appropriate federal, state, and local agencies, permit applications under the applicable NSR programs for those modifications made in violation of the CAA; (5) conduct an audit of each of its coal-fired plants identifying other physical changes made to those plants for which TVA was required to have permits but which were made without such permits; (6) provide a schedule for achieving compliance with respect to any additional violations identified in TVA's audit of its coal-fired plants; and (7) for any reductions in sulfur dioxide that result from pollution control equipment added pursuant to the Compliance Order, retire sulfur dioxide allowances equivalent to such reductions and be prohibited from using such reductions or selling them to any other utility.

After the Compliance Order was originally issued in November 1999, TVA requested a conference with Regional Administrator Hankinson, and a meeting was

held on December 20, 1999. At that meeting, TVA submitted a brief (the "December 1999 Brief") describing its objections to the Compliance Order and requested that the Agency withdraw and reconsider the Compliance Order. Briefly, TVA argued that its projects were not "modifications" of the respective units on the ground that the particular physical changes were "routine maintenance, repair, and replacement" within the meaning of the applicable regulations, and it provided an extensive discussion of various statements attributed to EPA regarding the meaning of the phrase "routine maintenance, repair, and replacement." December 1999 Brief at 7-22. In its December 1999 Brief, TVA also argued that none of the physical changes made to its coal-fired plants resulted in a "significant net emissions increase." *Id.* at 23-31. Finally, TVA argued that the actions required of it by the original version of the Compliance Order are not authorized by the CAA. *Id.* at 32-35.

2. *Administrator's Delegation to the Board*

On May 4, 2000, the Administrator issued a memorandum to the Board ("Administrator's Memorandum") directing that the Board conduct appropriate proceedings upon reconsideration of the Compliance Order, assuming that Regional Administrator Hankinson decided that the Compliance Order should be reconsidered.[6] The Administrator also requested that the Board issue a final decision on behalf of the Agency by September 15, 2000. The Administrator's Memorandum requested that EPA Enforcement and TVA be provided an opportunity to conduct limited discovery

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[6] Regional Administrator Hankinson subsequently granted reconsideration by letter dated May 4, 2000.

and provide limited oral testimony and that the administrative record be closed by August 1, 2000.

3. *Prehearing Orders by the Board*

By order dated May 15, 2000, the Board referred the prehearing and evidentiary hearing proceedings in this case to the Agency's Office of Administrative Law Judges. The Board's May 15 Order requested that the Administrative Law Judge assigned to the case present to the Board a complete record of the prehearing and evidentiary hearing proceedings by August 1, 2000. The May 15 Order also stated that, in conducting the prehearing and evidentiary hearing proceedings, the Administrative Law Judge was to look for guidance to the Consolidated Rules of Practice set forth at 40 C.F.R. part 22.[7] Thereafter the Chief Administrative Law Judge appointed Administrative Law Judge Andrew S. Pearlstein to preside over the prehearing and evidentiary hearing proceedings in this case.

The Board's May 15 Order also stated that the Board retained jurisdiction of this matter to conduct additional proceedings concurrently with the prehearing and evidentiary hearing proceedings discussed above. In particular, to facilitate the timely resolution of this matter, the Board directed that TVA and EPA Enforcement file briefs on certain issues, including briefs regarding the allocation of the burden of proof on the

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[7] The Board's May 15 Order also stated that the Administrative Law Judge was not being requested as part of this referral to make, or recommend, findings of fact or conclusions of law at the conclusion of the hearing in this matter; rather, we stated that the Board would make findings as necessary and appropriate upon receipt from the Administrative Law Judge of the record of the proceeding.

various claims and defenses asserted by the parties and briefs discussing the circumstances under which the law requires the owner or operator of a source to obtain (a) a PSD permit pursuant to 40 C.F.R. § 52.21, or pursuant to the applicable SIP, (b) a nonattainment NSR permit, and (c) a "minor NSR permit." The Board's Order also required EPA Enforcement to respond to various arguments made by TVA in its December 1999 Brief. After receiving briefs from the parties regarding allocation of the burdens of production and persuasion on the claims and defenses raised by the parties, in order to provide guidance to the parties during the evidentiary hearing the Board issued an order dated July 3, 2000, regarding the allocation of such burdens.

On May 17, 2000, TVA filed a motion seeking rescission of the Board's May 15 Order. In essence, TVA argued that the schedule set forth collectively in the Administrator's Memorandum, the May 15 Order and an order issued by Judge Pearlstein on May 17 did not provide TVA a full and fair opportunity to understand the allegations on which EPA Enforcement intended to focus in this proceeding and the basis for these allegations, and to test the rationale of EPA's allegations. EPA Enforcement opposed the motion. The Board denied that motion by order dated June 2, 2000, holding, *inter alia* that this proceeding is not a formal part 22 proceeding, that TVA is not entitled to discovery, and that the schedule in this proceeding has granted TVA significantly greater discovery and hearing rights than required by CAA § 113(a), 42 U.S.C. § 7413(a). By motion dated July 3, 2000, TVA renewed its motion to rescind on the grounds that events subsequent to June 2, 2000, demonstrated that this pro-

ceeding is "unfair" to TVA. After receiving a response from EPA Enforcement, the Board denied TVA's renewed motion to rescind by order dated July 7, 2000.[8]

4. *Judge Pearlstein's Prehearing Orders*

On May 17, 2000, Judge Pearlstein entered an initial order governing the conduct of the prehearing and evidentiary hearing proceedings. Judge Pearlstein's May 17 Order, among other things, allowed the parties to begin discovery immediately "on a voluntary, cooperative basis * * * to the maximum extent possible," and it established a schedule for the parties to provide a prehearing information exchange of the type contemplated by 40 C.F.R. § 22.19. Judge Pearlstein's May 17 Order also scheduled a prehearing conference in early June 2000 and tentatively scheduled the evidentiary hearing on eight days in mid-July 2000.[9]

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[8] In our view, the material issues were developed sufficiently to allow for an informed decision on our part, and we do not believe that TVA has been prejudiced during this reconsideration process by the pace of the proceedings.

[9] In addition, Judge Pearlstein's May 17 Order directed TVA to file an "answer" to the allegations of the Compliance Order, thereby treating the Compliance Order as functionally equivalent to a complaint for the purposes of framing the issues for the evidentiary hearing. In its answer to the Compliance Order, dated May 26, 2000, TVA asserted several affirmative defenses, including statute of limitations (TVA's Answer to EPA's Fourth Amended Order and Request for Information ("TVA Answer") ¶ 106), and failure on EPA Enforcement's part to issue an "adequate and reasonably intelligible Notice of Violation 30 days in advance of bringing this proceeding as required by 42 U.S.C. § 7413." TVA Answer ¶ 113. TVA did not reassert these two defenses in its post-hearing briefs and, for those reasons TVA appears to have abandoned them. In any event, neither defense is meritorious. By its terms, the statute of limitations at 28 U.S.C.

At the prehearing conference, which was held on June 7, 2000, in Knoxville, Tennessee, the parties agreed to a revised schedule for prehearing exchanges, a schedule for the parties to submit discovery disputes to Judge Pearlstein for resolution, and a schedule for the evidentiary hearing, providing for it to begin on July 11, 2000. Summary of Prehearing Conference (ALJ, June 9, 2000). Judge Pearlstein also stated, consistent with the Board's orders, that generally there is no right per se to discovery in Agency administrative proceedings and that any discovery disputes would be determined by the standards set forth in 40 C.F.R. § 22.19(e). *Id.* at 1.

During June, the parties submitted various discovery disputes to Judge Pearlstein concerning their requests for production of documents and interrogatories propounded to each other. On June 29, 2000, Judge Pearlstein issued an order, titled "Rulings and Guidelines on Discovery," in which he discussed the discovery disputes raised by the parties as of that date. In that order, Judge Pearlstein noted as follows:

> [A]s the parties are aware, the vast bulk of discovery in this case must be accomplished on a

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§ 2462 applies only to actions for fines and penalties. In this case, where the government is only seeking equitable or injunctive relief and not a penalty within the meaning of § 2462, the claims are not time limited. *See United States v. Telluride Co.*, 146 F.3d 1241, 1248 (10th Cir. 1998); *United States v. Banks*, 115 F.3d 916, 919 (11th Cir. 1997), *cert. denied*, 522 U.S. 1075 (1998), *reh'g denied*, 523 U.S. 1041 (1998). Moreover, we have reviewed the notice of violation issued by EPA Enforcement to TVA on or about March 9, 2000, and are unpersuaded that it fails to comply with the statutory notice requirement set forth in CAA § 113(a), 42 U.S.C. § 7413(a).

> voluntary basis. The river of discovery is flowing and can only be slightly nudged to one side of the channel or the other by these rulings or guidelines.

Rulings and Guidelines on Discovery at 2. Judge Pearlstein also stated that "[i]t must also be remembered that this is a proceeding to reconsider an administrative compliance order. * * * This is not a federal court action or even a standard Part 22 administrative enforcement proceeding." *Id.* at 3. Judge Pearlstein observed that the parties would not have time in this proceeding to produce and review large volumes of documents and that "[t]he parties' resources would best be devoted to preparing their own cases and analyzing the actual evidence proposed by the opposing party as revealed in the prehearing exchange." *Id.* at 3-4.

In turning to the parties' arguments, Judge Pearlstein largely sustained EPA Enforcement's objections that TVA's document requests were "vague and likely to include an unreasonably large number of documents of little or no probative value." *Id.* at 4. Judge Pearlstein also held that "TVA has not shown generally that many of the categories of documents it is seeking will have significant probative value on a disputed issue of material fact in this proceeding."[10] *Id.*

5. *The Evidentiary Hearing*

Judge Pearlstein began the evidentiary hearing on the morning of July 11, 2000, and completed the hearing in the evening of July 17, 2000. At the request of the

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[10] Given the volume of relevant evidence in the record pertaining to each of the issues, we do not disagree with Judge Pearlstein's conclusions in this regard.

Board, the evidentiary hearing was recorded on video tape as well as by transcript.[11] At the evidentiary hearing, EPA Enforcement called four witnesses and introduced more than 300 exhibits. Briefly, EPA Enforcement called the following four witnesses who testified regarding the following subjects:

1. Joseph Van Gieson, who provided a general description of the boilers of coal-fired electrical power

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[11] On September 14, 2000, as the Board was completing this order, TVA filed an "Errata Sheet" regarding the transcript of the hearing in this matter (July 11 to 17, 2000). The Errata Sheet consists of twenty-four pages of changes that TVA apparently would like to have made to the transcript, accompanied by largely handwritten changes to the 1,105 page transcript. TVA, however, did not file a motion seeking approval of the suggested changes. We have previously stated that the Agency's Consolidated Rules of Practice, 40 C.F.R. Part 22, should be considered as guidance in the evidentiary hearing phases of this proceeding. May 15 Order at 2. Those rules provide that "[a]ny party may file a motion to conform the transcript to the actual testimony within 30 days after receipt of the transcript, or 45 days after the parties are notified of the availability of the transcript, whichever is sooner." 40 C.F.R. § 22.25. Under the guidance of this rule, we conclude that TVA's Errata Sheet must be rejected. TVA has made no showing that its submission is timely under the rule. (Moreover, we find that it is unreasonable for TVA to file its proposed Errata Sheet one day prior to the date on which a final decision was expected in this matter.) TVA also failed to file a motion seeking to conform the transcript to the "actual testimony." After reviewing relevant portions of the videotape, we find that several of TVA's suggested changes do not seek to conform the transcript to the actual testimony, but, remarkably, instead seek to add words or phrases that clearly were not spoken by the witnesses. *See, e.g.*, suggested changes to Tr. at 735, 766. Although, based on our preliminary review of TVA's proposed changes for purposes of determining whether to accept the substitutions, we have found nothing that would affect our decision, for the foregoing reasons, we reject this submission.

plants and air emissions analysis. Mr. Van Gieson also provided testimony regarding the operation and mechanics of coal-fired electric generating units and emissions estimation techniques and calculation of emissions from coal-fired power plants. Mr. Van Gieson prepared written testimony, which was submitted prior to the hearing and admitted into evidence at the hearing as EPA Enforcement Ex. 277.

2. Donald Randolph, who testified regarding his experience in various roles as a former employee and manager in TVA's maintenance department, including his experience with boiler maintenance projects at TVA. Mr. Randolph provided detailed testimony regarding the project at Widows Creek Unit 5. Mr. Randolph, who was subpoenaed to appear by EPA Enforcement, did not submit written testimony.

3. Michael J. Majoros, Jr., who testified regarding accounting rules applicable to public utility companies and classification of their assets and expenses. Mr. Majoros prepared written testimony, which was submitted prior to the hearing and admitted into evidence at the hearing as EPA Enforcement Ex. 280. In general, Mr. Majoros testified regarding the accounting records of the costs associated with the particular generating units at issue in this case and the accounting of the expenses associated with the fourteen physical changes at those units.

4. Alan Michael Hekking, who testified regarding maintenance of coal-fired electric power plants. Based on his experience as a former TVA plant manager, Mr. Hekking prepared written testimony, which was submitted prior to the hearing and admitted into evidence at the hearing as EPA Enforcement Ex. 279. Mr.

Hekking also provided more detailed testimony regarding the reheater replacement project at Allen Unit 3.

At the evidentiary hearing, TVA called five witnesses and introduced thirteen exhibits including attachments. Briefly, TVA called the following witnesses who testified regarding the following subjects:

1. Jerry Golden, who testified about TVA's practices with respect to maintenance, repair, and replacement. Mr. Golden prepared written testimony, which was submitted prior to the hearing and admitted into evidence at hearing as TVA Ex. 4.

2. James Callahan, who testified on the accounting rules regarding the capitalization of plant-related expenditures and their implications under the CAA. Mr. Callahan prepared written testimony, which was submitted prior to the hearing and admitted into evidence at the hearing as TVA Ex. 6.

3. Gordon George Park, who testified regarding TVA's environmental compliance practices. Mr. Park prepared written testimony, which was submitted prior to the hearing and admitted into evidence at the hearing as TVA Ex. 5.

4. Donald Price Houston, who testified regarding the data and calculations of emissions at the nine units at issue. Mr. Houston prepared written testimony, which was submitted prior to the hearing and admitted into evidence at the hearing as TVA Ex. 9.

5. Joseph R. Bynum, who testified regarding TVA's power system, including load demand, TVA's overall maintenance philosophy, TVA's Fossil and Hydro Unit Evaluation and Modernization Program ("FHUEM") report and the implications to TVA if EPA's regulatory interpretation should apply. Mr. Bynum prepared

written testimony, which was submitted prior to the hearing and admitted into evidence at the hearing as TVA Ex. 12.

On July 17, 2000, Judge Pearlstein concluded the hearing and sent the complete record to the Board for its decision on reconsideration.

6. *Filings Before the Board*

Pursuant to the Board's May 15 Order, the parties entered into and filed a comprehensive stipulation as to the air quality designation (as either attainment or nonattainment of the NAAQS) in the areas of TVA's plants at the time of the various projects. *See* Joint Stipulations of Applicable Regulations and Attainment Status (August 2, 2000) ("Regulation Stipulation"). In the Regulation Stipulation, the parties also stipulated to the SIP provisions and federal regulations applicable during the relevant time periods. The parties attached copies of the SIP and federal regulation texts to the Regulation Stipulation in numbered tabs from 1 to 23. *Id.* Throughout this decision, we will generally refer to the Regulation Stipulation and the numbered tabs as citations for the relevant regulatory text.

Currently, the Board has before it EPA Enforcement's, TVA's, and non-parties Southern Alliance for Clean Energy and Natural Resource Defense Council's ("SACE/NRDC")[12] briefs on the merits of the Compliance Order, which total more than 600 pages in

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[12] The Board granted SACE/NRDC the opportunity to submit non-party briefs, essentially as an amicus, under the rules generally applicable to Agency administrative enforcement proceedings. *See* Order Denying Motion to Intervene, Granting Leave to File Non-Party Briefs, and Scheduling Post-Hearing Briefing (EAB, June 16, 2000).

length. These briefs include: the Initial Brief of EPA Enforcement filed June 15, 2000 ("EPA Initial Brief"); Brief of the Tennessee Valley Authority in Response to the Initial Brief of EPA Enforcement, filed July 5, 2000 ("TVA Response to Initial Brief"); Post-Hearing Brief for SACE/NRDC, filed August 4, 2000; EPA Enforcement's Post-Trial Memorandum, filed August 4, 2000 ("EPA Enforcement Post-Hearing Brief"); Initial Post-Hearing Brief of the Tennessee Valley Authority, filed August 4, 2000 ("TVA Post-Hearing Brief"); EPA Enforcement's Post-Hearing Reply Brief, filed August 11, 2000 ("EPA Enforcement Reply Brief") and the Response Post-Hearing Brief of the Tennessee Valley Authority, filed August 11, 2000 ("TVA Reply Brief"). On July 31, 2000, Babcock and Wilcox Company, which is not a party in this matter, also filed a document entitled "Amicus Curiae Filing of the Babcock and Wilcox Company" without leave from the Board to do so.[13]

Additionally, TVA has filed with the Board two motions[14] to compel further discovery. *See* Motion of

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[13] EPA Enforcement objects to the Babcock & Wilcox filing on the grounds that it was not properly filed and that it contains mostly factual assertions that should have been submitted into evidence at the hearing in order to allow an opportunity for cross examination. We find that Babcock & Wilcox filed this document without leave of the Board and failed to properly serve the parties. Additionally, the facts asserted in the document were facts that should have been introduced as evidence at hearing. *See* Order Denying TVA Motion to Rescind Scheduling Orders at 14 (EAB, June 2, 2000). Accordingly, we strike this filing from the record and will not consider it further.

[14] The first motion was submitted during the hearing, and Judge Pearlstein requested that the Board rule on it. The second motion was submitted after the close of the hearing.

Tennessee Valley Authority to Compel Discovery, filed July 11, 2000 ("TVA's Motion to Compel Discovery"); Second Motion of the Tennessee Valley Authority to Compel Discovery, filed July 31, 2000 ("TVA's Second Motion to Compel Discovery"); and the Reply Memorandum in Support of Motion of Tennessee Valley Authority to Compel Discovery, filed July 31, 2000 ("TVA's Reply Memo Supporting Motion to Compel Discovery").

In these motions, TVA requests the Board to compel EPA Enforcement to "comply with the Discovery Order and to produce certain relevant documents." *See, e.g.*, TVA's Second Motion to Compel Discovery at 1. Further, in TVA's second motion to compel, TVA requests the Board to compel EPA Enforcement to produce additional documents because the documents EPA Enforcement produced through discovery revealed additional documents not produced and because EPA Enforcement raised additional claims at the hearing that were not included in the Compliance Order. *See id.* at 1. EPA Enforcement has responded to TVA's discovery motions. *See* EPA Enforcement's Response in Opposition to Tennessee Valley Authority's Motion to Compel Discovery, filed July 17, 2000 ("EPA Enforcement Response to Motion to Compel"); and EPA Enforcement's Response in Opposition to Tennessee Valley Authority's Second Motion to Compel Discovery and TVA's Reply Memorandum in Support of Its Motion to Compel Discovery, filed August 17, 2000 ("EPA Enforcement's Response to TVA's Second Motion to Compel Discovery"). Because we do not see the additional discovery sought by TVA as ultimately leading to the addition of evidence adding significant probative value to the substantial information already

in the record relating to these issues, we deny both of TVA's motions to compel discovery.[15]

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[15] The Board denies both motions to compel further discovery for the following reasons. Initially, we note that the Compliance Order was issued pursuant to sections 113(a) and 167 of the CAA, 42 U.S.C. §§ 7413(a), 7477, which do not provide for any discovery. *See* Order Denying TVA Motion to Rescind Scheduling Orders (June 2, 2000). To the extent discovery has been allowed in this proceeding, we have used the standards set forth in 40 C.F.R. § 22.19(e) to guide the discovery process. *Id.* at 13.

The Board finds that EPA Enforcement has produced a large portion of the documents requested in TVA's motions to compel. In particular, EPA Enforcement has produced NSR determinations, including but not limited to those in the Agency's publically available "NSR Prevention of Significant Deterioration and Nonattainment Area Notebooks." With respect to those documents TVA requested that EPA has not produced, we find that TVA's motions to compel fall short of satisfying the provisions of 40 C.F.R. § 22.19(e), seek information that is largely cumulative of other information in the record, and reassert discovery disputes largely resolved by Judge Pearlstein in his Rulings and Guidelines on Discovery.

Specifically, TVA's motions do not address with enough specificity the requirement that such a motion for further discovery be granted only if it "seeks information that has significant probative value on the disputed issue of material fact relevant to liability or relief sought." *See* 40 C.F.R. § 22.19(e). TVA fails to identify the *significant probative value* of the documents requested, and, as Judge Pearlstein wrote in the order, we are unwilling to presume to which issues the documents relate. *See* Rulings and Guidelines on Discovery at 4.

Furthermore, the documents that TVA seeks are, for the most part, cumulative of the already extensive evidence in the record. As Judge Pearlstein observed, considerable discovery has taken place on a voluntary basis. In fact, EPA Enforcement states that it has produced approximately 135,000 pages to TVA. *See* EPA Enforcement's Motion to Compel Return of Privileged Documents

EPA Enforcement has also filed a motion with the Board to compel the return of documents which EPA Enforcement alleges are privileged. *See* Motion to Compel the Return of Privileged Documents Inadvertently Produced (July 25, 2000) ("EPA Enforcement's Motion to Compel Return of Privileged Documents"); *see also* Reply Supporting Its Motion to Compel the Return of Privileged Documents Inadvertently Produced (Aug. 18, 2000) ("EPA Enforcement's Response to Motion to Compel Return of Privileged Documents"). TVA has responded to this motion by filing two briefs in opposition: Opposition of Tennessee Valley Authority to EPA Enforcement's Motion to Compel the Return of Privileged Documents Inadvertently Produced (July 31, 2000) ("TVA's Response to EPA Enforcement's Motion to Compel Return of Privileged Documents"), and Reply of Tennessee Valley Authority to EPA Enforcement's Motion to Compel the Return of Privileged Documents Inadvertently Produced (Aug. 31, 2000) ("TVA's Reply to EPA Enforcement's Motion to Compel Return of Privileged Documents").[16]

(July 25, 2000). TVA has not shown how the documents sought are not otherwise cumulative.

Finally, TVA's motions also seek documents that go beyond Judge Pearlstein's Rulings and Guidelines on Discovery (e.g., state documents from states where no TVA plants are located). We accord significant deference to an Administrative Law Judge's discovery rulings, *In re Chempace Corp.*, FIFRA Appeal Nos. 99-2 & 99-3, slip op. at 24 (EAB, May 18,2000), 9 E.A.D. ___, and are unpersuaded by TVA's arguments for additional discovery.

[16] EPA Enforcement requests that TVA be compelled to return six documents that allegedly were "inadvertently released" by EPA Enforcement to TVA during the course of discovery. Each of those six documents is an internal EPA memorandum related to

inspections, enforcement reviews or other regulatory action with respect to power plants owned by Tampa Electric Company. As authority for its request, EPA Enforcement cites allegedly applicable case law regarding when a party waives its privilege as well as the "Protective Order," which was signed by both EPA Enforcement and TVA and then issued by Judge Pearlstein on July 6, 2000. In a subsequent pleading, EPA Enforcement states that four of the documents were not inadvertently released, but instead were "mistakenly" released. Reply Supporting Motion to Compel Return of Privileged Documents, at 4 n.4. In opposing EPA Enforcement's request, TVA argues that the Protective Order does not apply to EPA Enforcement's privilege claims and that, under applicable law, EPA Enforcement has waived any privilege.

Upon review we conclude that the Protective Order does govern whether the documents identified by EPA Enforcement are to be treated as confidential. The Protective Order applies to "Confidential Information," which is defined as documents or other information marked as confidential and which "a Party believes in good faith * * * is entitled to confidential treatment pursuant to 40 C.F.R. Part 2." Protective Order ¶ 2. Included among the types of information entitled to confidential treatment under Part 2 are "[i]nter-agency or intra-agency memorandums or letters which would not be available by law to a party other than an agency in litigation with an agency." 40 C.F.R. § 2.118(a)(5). Even if information has not been marked as confidential in the manner required by the Protective Order and has been inadvertently disclosed, such information may nonetheless be treated as Confidential Information pursuant to the procedures governing inadvertent disclosure identified in paragraph 10 of the Protective Order.

Applying these standards here, we conclude that five of the documents identified by EPA Enforcement in its Motion are not entitled to protection as Confidential Information under the terms of the Protective Order. Paragraph 10 only applies to "inadvertent or unintentional disclosure." EPA Enforcement has admitted that "[f]our of the six documents were intentionally released to TVA." Intentional release is, in our view, the opposite of inadvertent, and is the essence of a knowing waiver. EPA Enforcement has only

Finally, through EPA Enforcement's Post-Hearing Reply Brief, EPA Enforcement objected to several documents that TVA had attached to its post-hearing brief.[17] TVA responded to EPA Enforcement's objections in its August 17, 2000 filing, Tennessee Valley Authority's Response to EPA Enforcement's Objections Regarding the Scope of the Factual Record. For reasons stated in note 18, we deny EPA Enforcement's request to exclude those documents.

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identified the four intentionally released documents as "enforcement inspection reports at Tampa Electric Company ('TECO') facilities." Reply Supporting Motion to Compel Return of Privileged Documents at 4 n.4. Absent a better description of the four intentionally released documents, we rely upon TVA's statement that five of the six documents were found by TVA in a file titled "Region 4 TECO Inspection Reports." TVA's Opposition to Privilege Document Motion at 13. These five documents shall be treated as intentionally released and not entitled to treatment as Confidential Information under the Protective Order. As to the last document, bates range EPAOEC 049391-049406, EPA Enforcement has demonstrated that it was inadvertently disclosed and that it is the type of internal Agency memorandum entitled to confidential treatment under 40 C.F.R. Part 2. Therefore, this document is entitled to treatment as Confidential Information under the terms of the Protective Order and must not be disclosed by TVA, or its attorneys, to any third party.

[17] EPA Enforcement has objected to a number of tables and attachments that were included in TVA's Post-Hearing Brief, on the grounds that TVA submitted them after the close of the record on August 1, 2000. EPA Enforcement requests that the Board exclude those documents from the record. Although the documents were submitted after August 1, 2000, we find that the majority of the documents TVA included in its Post-Hearing Brief have little probative value to the case at hand and EPA Enforcement will not be prejudiced by these late submissions. Therefore, we will not exclude those documents from the record.

III. *DISCUSSION*

As noted above, the parties have raised a variety of legal and factual issues primarily relating to whether the changes made by TVA to its plants fall within the "routine maintenance, repair, and replacement" exception and whether those changes result in an emissions increase. In this part of our decision, we will discuss the issues raised by the parties and explain our conclusions. We begin by summarizing our conclusions.

A. *The Compliance Order Must Be Sustained in Part and Vacated in Part*

As discussed more fully below, based on the record of this reconsideration proceeding, we find that in a number of respects the Compliance Order cannot be sustained. In particular, EPA Enforcement has, during the course of this proceeding, abandoned certain allegations made in the Compliance Order. Moreover, as discussed below, we conclude that the record does not support a number of the allegations of increased emissions. On the other hand, in several important respects, we find that the Compliance Order must be sustained.

We reject TVA's primary defense—that all of the projects were undertaken as routine maintenance, repair, and replacement—for the reasons stated in Part III.C below. In summary, we conclude that EPA Enforcement has met its burden of establishing that each of the fourteen projects constitutes a physical change under the statute and applicable regulations. After reviewing the statutory goals, legislative history, and case law regarding NSR, the Board finds, as discussed below, that the four factor test EPA Enforcement advocates for determining whether a project falls within the routine maintenance, repair, and replace-

ment exception is reasonable and consistent with the statute, regulations, and case law. Further, the Board rejects, as inconsistent with the statute, regulations, and case law, TVA's interpretation of the routine maintenance, repair, and replacement exception. TVA's view of the breadth of the exception would, in our view, swallow the rule that subjects existing sources to the requirement to install modern pollution controls when physical changes that increase emissions are made to these plants.

We then apply the four factor test to the projects at issue to determine whether the projects are within the scope of the exception. In doing so, we find that TVA has not met its burden of establishing that these projects are within the ambit of "routine maintenance, repair, and replacement" and therefore exempt from NSR's permitting requirements. TVA has also raised a fair notice defense and an improper rulemaking defense to EPA Enforcement's use of its interpretation of routine maintenance, repair, and replacement. We find both defenses must fail for the reasons stated in Part III.C below. TVA has not established on the record in this case that the interpretation of the regulatory exception advocated by EPA Enforcement was not "ascertainably certain" from the regulation's text and its statutory context. TVA's assertion that EPA has changed its interpretation of the exception without proper notice and comment rulemaking likewise fails.

Although we reject TVA's primary defense, we nevertheless conclude, as discussed below, that the Compliance Order can be only partially sustained and must be vacated in a number of respects because of a lack of proof, particularly proof of increases of pollutant emissions. First, the Region alleged in the Compliance

Order that, as a result of the changes made by TVA to Paradise Unit 3, TVA allegedly violated the NSPS. Compliance Order ¶¶ 95-98. In its Post-Hearing Brief, EPA Enforcement states that EPA Enforcement "is withdrawing the NSPS violation for Paradise Unit 3." EPA Enforcement Post-Hearing Brief at 163 n.102. Thus, the allegations regarding Paradise Unit 3's violation of the NSPS must be vacated.

Second, with respect to Colbert Unit 5, the Region alleged that TVA failed to comply with "the [NSPS] emission standards, testing, notification, record keeping, and reporting requirements." Compliance Order ¶ 102. However, EPA Enforcement introduced no evidence as to whether the post-change emissions from Colbert Unit 5 exceeded the emissions standards of 40 C.F.R. part 60, subpart Da. Thus, the allegation that the operation of Colbert Unit 5 violated the emissions standard of the NSPS must be vacated.[18]

Third, the Compliance Order alleged that the changes made to each of the fourteen units at issue in this proceeding required a minor NSR permit from Alabama, Kentucky, Tennessee, or Memphis/Shelby County and that the failure to obtain such minor NSR permits violated the applicable state SIP. Compliance Order ¶¶ 50, 52, 60, 62, 70, 72, 74, 76, 78. In its Post-Hearing Brief, EPA Enforcement does not argue that any of the changes made to the units located in Kentucky (Paradise Units 1, 2 and 3, and Shawnee Units 1 and 4) violated the Kentucky minor NSR permitting requirements. *See* EPA Enforcement Post-

[18] However, for the reasons discussed below in Part III.E, we conclude that the Compliance Order must be sustained with respect to the allegations that at Colbert Unit 5 TVA violated the NSPS requirements for testing, record keeping, and reporting.

Hearing Brief at 83-89. Accordingly, we conclude that EPA Enforcement has abandoned the allegations as to violation of the Kentucky minor NSR permitting requirements with respect to the changes made to these five units. Accordingly, in this respect the Compliance Order also must be vacated.[19]

Fourth, the Compliance Order alleged that each of the changes made to the fourteen units at issue resulted in a significant net emissions increase in the emissions of nitrogen oxides ("NO_X"), sulfur dioxide ("SO_2"), or particulate matter ("PM") requiring PSD and/or non-attainment NSR permitting. Compliance Order ¶¶ 50, 52, 60, 62, 70, 72, 74, 76, 78. In its Post-Hearing Brief, EPA Enforcement fails to argue that the changes to the following units resulted in a significant net emissions increase with respect to the following pollutants:

Allan Unit 3 – PM
Cumberland Units 1 and 2 – SO_2
John Sevier Unit 3 – PM
Kingston Unit 6 – PM
Paradise Units 1, 2 and 3 – SO_2 and PM
Shawnee Units 1 and 4 – PM

See EPA Enforcement Post-Hearing Brief at 73-90. Accordingly, we conclude that EPA Enforcement has abandoned the allegations as to violations with respect to these pollutants at the identified units. To the extent that the Compliance Order intended to allege per-

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[19] We discuss the allegations regarding violation of the Alabama, Tennessee, and Memphis/Shelby County minor NSR permitting requirements in Part III.F below and conclude that the allegations that TVA violated these requirements must be sustained.

mitting violations with respect to all three pollutants at each unit, the Compliance Order cannot be sustained.

EPA Enforcement has, however, by virtue of the proof it has proffered, not abandoned the allegations of violations with respect to the following pollutants at the identified units (an "X" indicates that a finding of violation is requested with respect to the pollutant):

Chart No. 1

	NO_X	SO_2	PM
Allen Unit 3	X	X	
Bull Run Unit 1	X	X	X
Colbert Unit 5	X	X	X
Cumberland Unit 1	X		X
Cumberland Unit 2	X		X
John Sevier Unit 3	X	X	
Kingston Unit 6	X	X	
Kingston Unit 8	X	X	X
Paradise Unit 1	X		
Paradise Unit 2	X		
Paradise Unit 3	X		
Shawnee Unit 1	X	X	
Shawnee Unit 4	X	X	
Widows Creek Unit 5	X	X	X

EPA Enforcement Post-Hearing Brief at 73-90. In our discussion below, we will refer to this chart, which reflects twenty-nine alleged violations, as summarizing EPA Enforcement's requests for findings of violation.

As will be discussed below in Part III.D, EPA Enforcement bases its twenty-nine remaining requests for findings of NSR violations upon an emissions increase test commonly referred to as the "actual-to-potential" test, which compares actual pre-change emissions (based on the annual average emissions in a two-year baseline period) to the maximum potential to emit of the unit if it were operated twenty-four hours a day for 365 days in a year. EPA Enforcement bases its request for findings of violation on an actual baseline period that is the two years immediately preceding the changes made to each of the units. For the reasons stated in Part III.D.4, we conclude that the preponderance of the evidence in the record here establishes that another baseline period is more representative in this case—the two-year period with the highest emissions within the five year period preceding the particular change, not the two years immediately preceding the changes. In Part III.D.5, we further note that in the Compliance Order the Region stated that actual premodification emissions are compared with "projected actual emissions" after the modification, in order to establish an NSR violation. Compliance Order ¶ 18. Therefore, we conclude that, given this clearly stated predicate in the Compliance Order, that EPA Enforcement should not, on reconsideration, be permitted to apply the actual-to-potential test.

In Part III.D.5, we explain why we conclude that a finding of violation for failure to obtain a preconstruction permit should be based upon what the source owner reasonably could have predicted prior to beginning construction. Applying a projected actual emissions test and the more representative baseline period, we conclude for the reasons stated in Part

III.D.5.c that EPA Enforcement has failed to show the requisite emissions increases for a number of the pollutants at some of the units for which it had requested a finding of violation. For Widows Creek Unit 5, we find that EPA Enforcement has failed to show the requisite increase for any of the three identified pollutants. In total, considering all pollutants and units for which EPA Enforcement either abandoned the NSR claims made in the Compliance Order or failed to sustain its proof, the record does not support the Compliance Order's allegations with respect to twenty-one alleged violations, considering each pollutant at each unit as a separate violation. Accordingly, we are vacating these portions of the Compliance Order. However, we also find, as discussed below in Part III.D.5.c (and Part III.E, where SO_2 emissions from Colbert Unit 5 are discussed), that the Compliance Order must be sustained with respect to the twenty-one remaining violations of the PSD and/or nonattainment NSR permitting requirements. This includes violations of at least one pollutant for each of the fourteen units, except for Widows Creek Unit 5.

In summary, as discussed below, we find that EPA Enforcement has demonstrated that TVA violated the PSD and nonattainment NSR permitting requirements with respect to the following pollutants at the identified units:

Chart No.2

	NO_X	SO_2	PM
Allen Unit 3	X	X	
Bull Run Unit 1	X	X	
Colbert Unit 5	X	X	X
Cumberland Unit 1	X		
Cumberland Unit 2	X		
John Sevier Unit 3		X	
Kingston Unit 6	X	X	
Kingston Unit 8	X	X	
Paradise Unit 1	X		
Paradise Unit 2	X		
Paradise Unit 3	X		
Shawnee Unit 1	X	X	
Shawnee Unit 4	X	X	

We also find, as discussed below, that EPA Enforcement has demonstrated that TVA violated the minor NSR permitting requirements of the applicable state SIPs with respect to the following pollutants at the identified units:

Chart No. 3

	NO_X	SO_2	PM
Allen Unit 3	X	X	
Bull Run Unit 1	X	X	X
Cumberland Unit 1	X		
Cumberland Unit 2	X		X
John Sevier Unit 3	X	X	
Kingston Unit 6	X	X	
Kingston Unit 8	X	X	X
Colbert Unit 5	X	X	X
Widows Creek Unit 5	X	X	X

Next, we begin our analysis with a brief discussion of the statutory requirements of the Act.

B. *General Requirements of the Clean Air Act and Regulations*

Many of the principal issues raised by the parties in this case relate to the statutory definition of "modification," which, as we have said, defines when older pollution sources, including ones that were constructed before the CAA permitting requirements were enacted, become subject to the pollution control requirements of the NSR and NSPS programs. In this part, we will describe the general requirements of the CAA that are implicated in this case, with particular emphasis on the role of the term "modification" in those general requirements.

1. *The National Ambient Air Quality Standards*

The CAA is designed to protect and enhance the nation's air quality. CAA § 101(b)(1), 42 U.S.C. § 7401. The 1970 amendments to the CAA required the EPA to promulgate NAAQS to regulate the emission of certain pollutants into the atmosphere. The NAAQS are "maximum concentration 'ceilings'" for particular pollutants, "measured in terms of the total concentration of a pollutant in the atmosphere." *In re Hawaii Elec. Light Co.*, PSD Appeal Nos. 97-15 to 97-23, slip op. at 9 (EAB, Nov. 25, 1998), 8 E.A.D. ___. As noted above, the air quality of a particular area is expressed in terms of whether the area is classified as "attainment," "unclassifiable," or "nonattainment" of the NAAQS for a particular pollutant. NAAQS have been set for six criteria pollutants: sulfur oxides,[20] particulate matter,[21] nitrogen dioxide ("NO_2"), carbon monoxide, ozone, and lead. *See* 40 C.F.R. §§ 50.4-.12.

In the present case, the parties have stipulated to the attainment classification for the areas where TVA's plants are located during the relevant time. *See* Regulation Stipulation at 5-6. Based on the Regulation Stipulation, it is undisputed that, during the time when construction was commenced on the physical changes

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[20] Sulfur oxides are to be measured in the air as SO_2. 40 C.F.R. § 50.4(c).

[21] In 1971, EPA promulgated primary and secondary NAAQS for particulate matter, measured as total suspended particulate matter, or "TSP." In 1987, EPA promulgated a NAAQS for PM designating particulate matter with an aerodynamic diameter less than 10 microns, or PM_{10}, as a criteria pollutant. Revisions to the National Ambient Air Quality Standards for Particulate Matter, 52 Fed. Reg. 52,634 (1987) (codified at 40 C.F.R. § 50.6). Thus, at different times NAAQS were measured as TSP and PM_{10}.

that are at issue in this proceeding, the areas where the Cumberland Plant, the Bull Run Plant, the Kingston Plant, and the John Sevier Plant are located were designated as attainment for NO_2, SO_2, and TSP/PM_{10}. Regulation Stipulation at 6 ¶ 2. The Allen Plant is located in an area that was classified in 1992 (when construction was commenced on the changes at issue here) as nonattainment for ozone and attainment for NO_2, SO_2, and PM_{10}. Regulation Stipulation at 5-6 ¶ 1. The Colbert Plant is located in an area that was classified in the relevant time frame (1982) as nonattainment for SO_2 and attainment for NO_2 and TSP/PM_{10}. Regulation Stipulation at 6 ¶ 5. The Paradise Plant is located in an area that was classified in the relevant time frame (1985) as nonattainment for SO_2 and TSP and attainment for NO_2. Regulation Stipulation at 6 ¶ 3. The Widows Creek Plant is located in an area that was classified in the relevant time frame (1989) as nonattainment for SO_2 and attainment for NO_2 and TSP/PM_{10}. Regulation Stipulation at 6 ¶ 5. The Shawnee Plant is located in an area that was classified in the relevant time frame (1989 and 1990) as nonattainment for TSP and attainment for NO_2 and SO_2. Regulation Stipulation at 6 ¶ 4.

2. *The NSPS and NSR Statutory Requirements*

The CAA prescribes several general methods relevant to this proceeding for protecting and enhancing the nation's air quality, which, as discussed below, become applicable to a particular emissions source if it is "modified" within the meaning of the statute and applicable regulations. The CAA requires the EPA to promulgate NSPSs limiting emissions from sources of air pollution that EPA determines substantially contribute to the endangerment of public health or welfare.

CAA § 111(b), 42 U.S.C. § 7411(b). NSPS are technology-based standards set at the emission rate that can be achieved by use of the best adequately demonstrated technology. CAA § 111(a)(1), 42 U.S.C. § 7411(a)(1). After the effective date of an NSPS, owners and operators of "any new source" are prohibited from operating the source in violation of the applicable NSPS. CAA § 111(e), 42 U.S.C. § 7411(e). "New source" is defined as "any source, the construction or *modification* of which is commenced after the publication of regulations * * * prescribing a standard of performance under this section which will be applicable to such source." CAA § 111(a)(2), 42 U.S.C. § 7411(a)(2) (emphasis added). EPA promulgated an NSPS for electric utility steam generating units, which by its terms became applicable to any source that is modified after September 18, 1978. 40 C.F.R. pt. 60, subpt. Da. Thus, if any of TVA's coal-fired steam generating units were "modified" within the meaning of the NSPS provisions on or after September 18, 1978, that unit was required to comply with the NSPS for electric utility steam generating units. As discussed below in Part III.E, EPA Enforcement argues that the changes made to Colbert Unit 5 in 1982-1983 were "modifications" that triggered the NSPS requirements. EPA Enforcement does not allege, in its Post-Hearing Brief, that any other projects triggered the NSPS requirements.[22]

In addition, the CAA, in Title I, parts C and D, requires that owners and operators of certain sources of air pollution must obtain permits before beginning

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[22] The Compliance Order also alleged NSPS violations at Paradise Unit 3. As discussed above, EPA Enforcement abandoned those alleged violations in its Post-Hearing Brief.

"construction," including "modification," of existing pollution sources. This preconstruction permitting requirement is generally referred to as new source review, or NSR. Although the NSPS program is focused on technology requirements for source categories, the NSR requirements focus on the location of the source and its potential effect on the environment of that locality. *Northern Plains Resource Council v. EPA*, 645 F.2d 1349, 1356 (9th Cir. 1981).

There are several types of NSR permitting requirements at issue in this case. Whether a source owner must obtain one of these permits, and which of them must be obtained, depends generally on the amount of air pollution to be emitted from the unit as a result of the modification and the air quality of the area (based on whether the area has or has not attained the NAAQS) in which the source is located at the time of the project. The permitting requirements are pollutant-specific, which means that a facility may emit many air pollutants, but only one or a few may be subject to the permitting requirements. *In re Hawaii Elec. Light Co.*, PSD Appeal Nos. 97-15 to -23, slip op. at 9 (EAB, Nov. 25, 1998), 8 E.A.D. ___.

The CAA requires EPA to establish two general types of NSR permitting programs. First, in order to prevent significant deterioration of air quality, the CAA establishes the PSD permitting program which governs preconstruction permitting in areas that are in "attainment" of the NAAQS or are "unclassifiable." *See* CAA §§ 160-169, 42 U.S.C. §§ 7470-7492. Second, the nonattainment NSR program governs preconstruction permitting in areas that are classified as not in attainment of the NAAQS. *See* CAA §§ 171-193, 42 U.S.C. §§ 7501-7515. Because the NAAQS are established on a

pollutant specific basis and air quality is assessed with respect to each pollutant, it is possible that a source may be subject to both the PSD permitting requirements and the nonattainment NSR permitting requirements at a single facility if the source is located in an area that is classified as "attainment" for some pollutants, but "nonattainment" with respect to other pollutants.

The CAA provides, with respect to both the PSD program and the nonattainment NSR program, that "modification" of a major stationary source of an air pollutant is unlawful unless the source owner or operator has obtained a preconstruction permit under the applicable PSD or nonattainment NSR program. CAA §§ 165(a), 169(2)(C), 171(4), 172(b)-(c), 42 U.S.C. §§ 7475(a), 7479(2)(C), 7501(4), 7502(b)-(c). Specifically, CAA section 165(a) prohibits "construction" of a facility without a permit, and section 169(2)(C) defines construction as including "modification" as defined in section 111(a) of the CAA.[23]

Before a permit is issued, among other things, the owner or operator of the source must demonstrate, *inter alia*, that post- modification emissions from the source will not violate air quality requirements. Specifically, the owner or operator must demonstrate that "emissions from * * * operation of such facility will not cause, or contribute to, air pollution in excess of [the NAAQS]," among other things. CAA § 165(a)(3), 42 U.S.C. § 7475(a)(3). Further, a permit may not be

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[23] Section 172(b)-(c) requires states to adopt SIPs for nonattainment areas that include provisions requiring permits for the construction of new or modified sources, and section 171(4) defines "modified" to have the same meaning as the definition of "modification" set forth in section 111(a).

issued unless "there has been an analysis of any air quality impacts projected for the area as a result of growth associated with such facility." *Id.* § 165(a)(6), 42 U.S.C. § 7410.

3. *CAA's Requirement for SIPs (the State Programs)*

The CAA contemplates that states may exercise primary responsibility for creating plans to maintain and improve the nation's air quality consistent with the requirements of the CAA. Thus, the CAA calls for states to develop state implementation plans, or SIPs, that provide a plan for attainment of the NAAQs in nonattainment areas and for the prevention of significant deterioration in areas that are already in attainment or unclassifiable. *See* CAA § 110, 42 U.S.C. § 7410.

In particular, the CAA requires that a state's SIP must "include a program to provide for * * * regulation of the *modification* and construction of any stationary source within the areas covered by the plan" to assure that the NAAQS are achieved. CAA § 110(a)(2)(C), 42 U.S.C. § 7410(a)(2)(C), (emphasis added). Sections 110(a) and 161 of the CAA require states to adopt SIPs that contain emission limitations and such other measures as may be necessary to prevent significant deterioration of the air quality in areas that have been designated as "attainment" or "unclassifiable" with respect to the NAAQS. Sections 110(a) and 172 require states to adopt SIPs that, among other things, provide for attainment of the NAAQS in "nonattainment" areas. Thus, states are required to promulgate both PSD and nonattainment NSR permitting programs as part of their SIPs. The CAA also authorizes states to require a third type of permit,

known as a minor source permit, which is applicable to all source modifications, whether located in attainment or nonattainment areas. CAA § 110(a)(2), 42 U.S.C. § 7410(a)(2).

Each state's SIP must set forth a permitting program that is at least as stringent as the requirements of the CAA. CAA § 110(a), 42 U.S.C. § 7410(a). EPA is charged with reviewing each state's proposed SIP and determining whether the SIP complies with the CAA's requirements. It must run federal permitting programs governing PSD and nonattainment NSR permitting in states that do not have an approved SIP. CAA § 110(c), (k), 42 U.S.C. § 7410(c), (k). EPA is also authorized to enforce the requirements of states' SIPs. *See* CAA § 113(a), 42 U.S.C. § 7413(a) (regarding, among other things, administrative orders to comply with SIPs).

In the present case, TVA's plants were, at various times, subject to the federal permitting regulations and at other times were subject to SIP permitting programs run by the States of Alabama, Tennessee, and Kentucky and a local program run by Memphis-Shelby County Air Pollution Control Board. Because this case involves fourteen projects at nine power plants located in three states and the projects spanned a time period between 1982 and 1996, our discussion of the particular regulatory requirements at issue in this case will take into account the differences in the regulatory language in the different regulatory programs, the changes in those regulatory programs over time, and the changes over time in air quality of the plant locations (which

resulted in changes in attainment classification in several areas for particular pollutants).[24]

4. *The Statutory Definition of "Modification"*

Although the particular language of the applicable regulatory program necessarily governs our determination of whether the alleged violations in fact occurred, the PSD, nonattainment NSR, and NSPS violations alleged in this case arise under the same operative language of the CAA: the definition of the term "modification," which, as noted, prescribes what construction activity must have a permit and what construction activity does not require a permit. This same definition of "modification" also defines when an existing source becomes subject to the NSPS requirements. CAA § 111(a)(2), 42 U.S.C. 7411(a)(2) (defining "new source" as "any stationary source, the construction or modification of which" is commenced after an identified date).

"Modification" for the purposes of the CAA's NSPS, SIP, PSD and nonattainment NSR requirements is defined in the statute as follows:

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[24] In brief, the applicable state regulations are: Memphis-Shelby County Air Pollution Control Regulation art. I, div. IV, §§ 16-77, S1200-3-9-.01, 16-46, 16-47, §§ 16- 48 (Regulation Stipulation tab 1); Rules of Tennessee Department of Public Health Bureau of Environmental Health Services Division of Air Pollution Control, ch. 1200-3-9- .01, rule 1200-3-2-.01 (Regulation Stipulation tabs 2-5); 401 Kentucky Air Regulations ("KAR") 51:050, 50:010, 51:017 (Regulation Stipulation tabs 6-8, 11-13); Alabama Department of Environmental Management ("ADEM") Regulation 16.4 (Regulation Stipulation tabs 14-15); ADEM Regulation 16.3.2 (Regulation Stipulation tab 15); ADEM Regulation 1.2 (Regulation Stipulation tab 21).

> The term "modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.

CAA § 111(a)(4), 42 U.S.C. § 7411(a)(4). For our purposes, this definition contains two primary parts: (1) there must be a "physical change in * * * [a source]"[25] and (2) the change must "increase[] the amount of any air pollutant emitted [by such a source]." *WEPCO*, 893 F.2d at 907 (quoting 42 U.S.C. § 7411(a)(4)). Thus, the central issues in this case regarding the application of NSR and NSPS requirements relate to whether the projects were physical changes within the meaning of the CAA and the regulations promulgated thereunder, and whether such changes resulted in increases in the amount of air pollutant emissions.

The next part of our discussion will focus on the first of the statutorily-prescribed two part test. We will consider whether the projects undertaken by TVA at nine of its coal-fired electric power plants are "physical changes" within the meaning of the statutory definition and the exceptions adopted by the regulations that implement each of the programs.

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[25] The statute also requires a permit before certain "operational changes" are made to a source. *See* CAA § 111, 42 U.S.C. § 7411. Because this case concerns "physical changes," however, our references to the statute will generally be limited to physical changes.

C. *"Physical Change" and the NSR Exclusions for Routine Maintenance, Repair, and Replacement (Both State and Federal)*

In this part of our decision, we will focus on the statutory requirement of a "physical change," as interpreted and elaborated upon by the applicable PSD and nonattainment NSR regulations and the case law, and as applied to TVA's projects at issue. In so doing, we will review the regulations that trigger the permitting requirements and examine whether: (1) EPA Enforcement met its *prima facie* case of proving that a "physical change" occurred during each of the projects; and (2) whether TVA met its burden of proving that the routine maintenance, repair, and replacement exception applies to the projects at issue in this case. Finally, we will consider TVA's arguments that EPA Enforcement's application of the rules to the TVA projects implicated by the Compliance Order presents fair notice concerns and represents an impermissible change in Agency interpretation.

1. *Was There a Physical Change?*

The initial element that EPA Enforcement must prove in its case is that each of TVA's fourteen projects at its nine plants did in fact constitute a "physical change" under the statute.[26] While this initial element

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[26] In the instant case, the units that are the subject of the Compliance Order have at various times been regulated under a SIP or the federal regulations that apply in the absence of SIP coverage. *See* Regulation Stipulation. In both the federal regulations for NSR and the SIPs for Alabama, Tennessee, and Kentucky, as well as Memphis-Shelby County's local program, the relevant regulatory definitions for "modification," "major modification," and "routine maintenance, repair, and replacement" are

is not seriously contested in this matter, it is worth noting the nature of the physical changes at the units in question.

In terms of what constitutes a "physical change" within the meaning of the CAA, the Seventh Circuit's holding in *WEPCO* is instructive. There, the court stated that "any physical change means precisely that." *WEPCO*, 893 F.2d at 909. In its decision, the court rejected Wisconsin Electric Power Company's argument that a "simple equipment replacement" did not constitute a physical change for the purpose of the CAA's modification provisions. Instead, the court gave the term "physical change" a broad construction:

> Thus, whether the replacement of air heaters and steam drums is a 'basic or fundamental change' in the Port Washington plant is irrelevant for our purposes, given Congress's directions on the subject: 'The term modification means any physical change * * *.' 42 U.S.C. § 7411(a)(4). We follow Congress's definition of 'modification'—not Webster's when interpreting this term within the context of the Clean Air Act.

Id. at 907 (citation omitted). In each of the fourteen projects TVA replaced or upgraded substantial boiler components. These components included: horizontal reheaters, economizers, superheaters, secondary super-

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substantially the same. Thus, for simplicity, the Board will refer to the federal regulations as representative of all like formulations in its discussion of "physical change." The Board's use of the federal regulations is also consistent with the parties' briefs on this matter. Throughout this reconsideration process, both parties have focused on the federal regulatory language for this first part of the test.

heaters, furnaces, waterwalls, and cyclones. Each project involved the replacement of thousands of feet of tubing. See EPA Enforcement Exs. 202-215; 273, *Id.* Ex. 279 (Hekking's pre-filed testimony); TVA Ex. 4 (Golden's pre-filed testimony). Recognizing the breadth of the phrase "physical change," TVS's replacement of various boiler components and elements clearly constituted physical changes within the meanong of the CAA.

2. *Were the Physical Changes Covered by the Routine Maintenance, Repair, and Replacement Exception?*

The regulatory provisions pertaining to physical changes provide a limited number of exceptions to the major modification definition. In this case, TVA has argued that one of these exceptions is applicable to all fourteen projects at issue here. That exception, known generally as the "routine maintenance exception,"[27] provides:

> A physical change or change in the method of operation shall not include: (a) Routine maintenance, repair, and replacement * * *.

40 C.F.R. §§ 51.165(a)(1)(v)(C), .166(b)(2)(iii), 52.21(b)(2)(iii).[28] This exception is not found in the statute, but rather is a creature of regulation, promulgated as part of EPA's NSR regulations in 1978.[29] Thus, the second

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[27] For ease of reference, we will generally use this phrase to refer to the routine maintenance, repair, and replacement exception.

[28] *See supra* note 25.

[29] The exception originated through the NSPS program, which also includes a similar, but not identical, routine maintenance, repair, and replacement exception. 40 C.F.R. § 60.14(e). "The following shall not be considered modifications under this part: (1)

step in our analysis is to consider whether, notwithstanding the presence of physical changes, TVA can demonstrate[30] that the physical changes were not subject to NSR because they were excepted as "routine maintenance, repair, and replacement." Although the regulations themselves do not elaborate further on the meaning of the phrase "routine maintenance, repair, and replacement," EPA provided the following guidance in the preamble to its 1992 amendment to the NSR regulations:

> [The] determination of whether the repair or replacement of a particular item of equipment is 'routine' under the NSR regulations, while made on a case-by-case basis, must be based on the evaluation of whether that type of equipment has been repaired or replaced by sources within the relevant industrial category.

57 Fed. Reg. 32,314, 32,326 (1992).

TVA and EPA Enforcement differ regarding the proper interpretation of this exception. In considering this interpretive dispute, we look first to the statute itself and its goals. *See Auer v. Robbins*, 519 U.S. 452 (1997); *North Haven Board of Ed. v. Bell*, 456 U.S.

Maintenance, repair, and replacement which the Administrator determines to be routine for a source category, subject to the provisions of paragraph (c) of this section and § 60.15." 40 C.F.R. § 60.14(e)(1). This NSPS exception, as applicable to Colbert Unit 5, will be discussed below in Part III.E.

[30] The Board has previously held in its July 3, 2000 Order Regarding the Scope of the Record, the Standard of Review, and Allocation of the Burden of Proof that the routine maintenance exception is an affirmative defense which TVA must raise and with respect to which TVA bears the burdens of production and persuasion. *See* July 3, 2000 Order at 25.

512(1982); *Georgia v. Shalala*, 8 F.3d 1565 (11th Cir. 1993); *O'Neal v. Barrow County Bd. of Comm'rs*, 980 F.2d 674 (11th Cir. 1993). A major goal of the CAA was to create a program that was technology forcing and that increased the use of air pollution control technology over time. " The Clean Air Amendments were enacted to 'speed up, expand, and intensify the war against air pollution in the United States with a view to assuring that the air we breathe throughout the Nation is wholesome once again.'" *WEPCO*, 893 F.2d at 909 (quoting H.R. Rep. No. 91-1146, at 1, *reprinted in* 1970 U.S.C.C.A.N. 5356).

In keeping with this objective, the program Congress established was particularly aggressive in its pursuit of state-of-the-art technology at newly constructed sources. At these sources, pollution control methods could be efficiently and cost-effectively engineered into plants at the time of construction. *See* H.R. Rep. No. 95-294, at 185, *reprinted in* 1977 U.S.C.C.A.N. at 1264 ("Building control technology into new plants at time of construction will plainly be less costly then [sic] requiring retrofit"). It was in view of the economic and practical difficulties of retrofitting older, existing plants with modern pollution control devices that Congress in effect "grandfathered" these sources, including the TVA facilities at issue here, from the duty to modernize pollution control.

As the courts have observed, the structure of the Act reflects that this grandfathering was envisioned as a temporary rather than permanent status, in that existing plants were required to modernize air pollution controls whenever they were modified in a way that increased emissions. *WEPCO*, 893 F.2d at 909 ("But Congress did not permanently exempt existing plants

from these requirements; section 7411(a)(2) provides that existing plants that have been modified are subject to the Clean Air Act programs at issue here."). Given that existing sources necessarily deteriorate in performance over time, they ultimately must either shutdown or undergo major overhauls to extend their productive life. Since, in the latter case, such major overhauls would often be subject to the requirement to modernize pollution controls, ultimately the environmental protection goals of the CAA would be realized at the vast majority of major sources of air pollution. *See WEPCO*, 893 F.2d at 909 ("The purpose of the modification rule is to ensure that pollution control measures are undertaken when they can be most effective, at the time of new or modified construction."); *Alabama Power*, 636 F.2d at 400 (The statutory scheme intends to `grandfather' existing industries; but the provisions concerning modifications indicate that this is not to constitute a perpetual immunity from all standards under the PSD program. If these plants increase pollution, they will generally need a permit.").

We find additional instruction in the case law pertaining to construction of exceptions. Generally, where, as here, an exclusion is created by regulation, and where the statute does not explicitly contemplate such an exclusion, the exclusion will be narrowly construed. *See O'Neal v. Barrow County Bd. of Comm'rs*, 980 F.2d 674 (11th Cir. 1993); *see also North Haven Bd. of Educ. v. Bell*, 456 U.S. 512 (1982). Consistent with this principle of construction, the court in *Alabama Power* found that EPA's authority to exempt sources from the statutory definition of "modification" is limited to "de

minimis [activity] or administrative necessity."[31] *Alabama Power*, 636 F.2d at 400. The regulatory exceptions to "physical change" promulgated by the Agency in the wake of *WEPCO* generally reflect this limiting constraint.[32] Indeed, EPA has been mindful of this constraint:

> The EPA has always recognized that the definition of physical or operational change in section 111(a)(4) could, standing alone, encompass the most mundane activities at an industrial facility (even the repair or replacement of a single leaky pipe, or a change in the way that pipe is utilized). However, EPA has always recognized that Congress obviously did not intend to make every activity at a source subject to new source requirements.

57 Fed. Reg. 32,314, 32,316 (1992).

The interpretive inquiry at hand cannot be divorced from this statutory and regulatory backdrop; rather, it

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[31] In *Alabama Power*, the court remanded to EPA the Agency's original definition of major modification. The original definition of a major modification included the requirement that the potential emission rate increase by either 100 tons per year or more for any source category identified in the Act (42 U.S.C. § 7479(1)), or by 250 tons per year or more for any stationary source. The court found that EPA had not justified this exemption to the Act of de minimis or administrative necessity and, therefore, struck that portion of the definition. *Alabama Power*, 636 F.2d at 400.

[32] Examples of other exceptions to "physical change" include: use of an alternative fuel by reason of an order or rule under section 125 of the Act; use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste; and any change in ownership at a stationary source. *See generally*, 40 C.F.R. §§ 51.165(a)(1)(v)(C), 166(b)(2)(iii), 52.21(b)(2)(iii).

should be fundamentally informed by it. We turn now to the parties' specific contentions regarding how the routine maintenance exception should be construed in the context of this case. For its part, EPA Enforcement argues that the exclusion requires:

> a case-by-case determination by weighing [1] the nature [and] extent, [2] purpose, [3] frequency, and [4] cost of the work, as well as other relevant factors, to arrive at a common-sense finding.

EPA Enforcement Initial Brief at 24.[33] As support for its position, EPA Enforcement directs the Board to the Seventh Circuit's discussion of the routine maintenance exception in *WEPCO*. In *WEPCO*, the court unquestionably applied the four factor test[34] proposed here by EPA Enforcement in concluding that the particular project under review fell outside the routine maintenance exception. *WEPCO*, 893 F.2d at 910-12.

TVA does not so much take issue with the four factor test advanced by EPA Enforcement and embraced by the court in *WEPCO*, but rather argues that the predominant consideration in applying the four factor test

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[33] EPA Enforeement's articulation of the test is essentially the same as that articulated in internal Agency guidance from over a decade ago. *See* Memorandum from Don R. Clay, Acting Assistant Administrator for Air and Radiation, U.S. EPA, to David A. Kee, Director of Air an Radiation Division, Region V (Sept. 9, 1988) ("Clay Memorandum"). The Clay Memorandum was cited by the Seventh Circuit in its 1990 decision. *WEPCO*, 893 F.2d at 906.

[34] In referencing the test as "the four factor test," we do not intend to discount the possible significance in a given case of the catch-all phrase, "as well as other relevant factors." In this case, however, the evidence fairly neatly arrays itself under the four main factors, thus making it unnecessary to give special consideration to other relevant factors.

is whether the activity is "common within a relevant source category." TVA Reply Brief at 23. In support of this view, TVA cites, among other things, the preamble to the 1992 amendments to the NSR regulations, which states:

> [W]hether the repair or replacement of a particular item of equipment is "routine" under the NSR regulations, while made on a case-by-case basis, must be based on the evaluation of whether that type of equipment has been repaired or replaced by sources within the relevant industrial category.

57 Fed. Reg. at 32,326 (1992). Thus, in determining whether a project is "routine," TVA's approach looks first to industry practice to determine whether the activity has been undertaken elsewhere. If it has, then, in TVA's view, it should be regarded as routine.

EPA Enforcement acknowledges that the determination of what is routine is necessarily informed by the context of the industry within which a facility operates, *see* EPA Enforcement Initial Brief at 29, but argues that the fact that a number of facilities within an industry may have undertaken a project which would be viewed as significant in the life of any individual facility does not render such a project "routine" within the meaning of the exception. Rather, according to EPA Enforcement, routineness should be determined according to a broader range of considerations, including, most notably, the significance of the project in the life of the unit in question. Thus, in EPA Enforcement's view, an activity is more likely to be regarded as routine if it is not unusual in the life of a given unit.

TVA's argument ultimately cannot bear scrutiny when set against the structure and objectives of the

CAA and the NSR program. As TVA's analysis of the coal-fired utility industry suggests, the coal-fired utility industry is replete with older plants that, to remain productive, have required significant overhauls.[35] The reference group to which TVA points is thus one in which a significant number of projects have been undertaken to restore and extend plants' productive lives. If TVA can, under cover of routine maintenance, repair, and replacement, undertake significant, emissions-increasing overhauls of its existing facilities without modernizing pollution controls simply because others in the industry have undertaken like projects, then the CAA's grandfathering of TVA's units in 1977 becomes, in effect, a permanent status. In that event, the natural and efficient occasions that Congress and the courts anticipated for installing modern pollution control equipment, such as where operations are suspended for purposes of reconstructing related equipment, are forfeited.

Given the extent of rehabilitation efforts in TVA's reference group, TVA's construction of the exception would, carried to its logical conclusion, allow TVA to rebuild an entire facility without triggering new source review so long as it did so in increments that can be identified elsewhere in the industry. Indeed, there is evidence that this was an important part of TVA's design. For example, in 1984, a TVA official made the following statement in notes which he typed and submitted to his supervisor after attending an industry life-extension conference. *See* Tr. at 700.

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[35] At the hearing, as noted *infra*, TVA introduced evidence concerning frequency of boiler component replacements throughout the utility industry.

> One statement concerning environmental regulations will need to be kept in mind if massive unit rehab projects are undertaken. If modifications proposed are extensive enough to be considered reconstruction, EPA might try to apply the new source performance standards. *This could erase one major advantage of life extension over new plant construction.*[36]

See EPA Enforcement Ex. 139, at 8922750 (Notes from C.F. Dye, Project Manager, Plant Life Extension, Bull Run Steam Plant, to C.N. Dammann, Assistant Director of Fossil and Hydro Power (June 4, 1984)) (emphasis added). This appears to be the kind of "end run" on new source review that concerned the D.C. Circuit in *Alabama Power*, *see* 636 F.2d at 400 (Congress did not intend that there be "perpetual immunity from all standards under the PSD program"), and that informed the court's conclusion in *WEPCO*.[37] Accepting TVA's view risks allowing routine maintenance, repair, and replacement to become the exception that swallows the rule that otherwise requires upgrading of pollution control equipment during modification events. Such an outcome simply cannot be reconciled with the

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[36] Although this note refers to reconstruction issues under NSPS, *see* 40 C.F.R. § 60.15, it is nevertheless instructive as to TVA's overall orientation to new source issues.

[37] In *WEPCO*, the court approved of EPA's conclusion that if the "purpose is to completely rehabilitate aging power generation units whose capacity has significantly deteriorated over a period of years, thereby restoring their original capacity and substantially extending the period of their utilization as an alternative to retiring them as they approach the end of their life, then the change is not routine." *WEPCO*, 893 F.2d at 911.

objectives of the CAA.[38] *See WEPCO*, 893 F.2d at 909 (the CAA should not be construed in a manner that would "open vistas of indefinite immunity from the provisions of NSPS and PSD").

TVA's citation to the 1992 preamble and the 1975 NSPS regulatory exclusion cannot serve to resuscitate its interpretation. First, the 1975 NSPS regulations are not applicable to the PSD and nonattainment NSR permitting requirements and, thus, are not relevant in this context.[39] Second, the language in the 1992 preamble merely explains that in determining whether an activity is "routine," the applicability of the exclusion must be assessed in the context of the particular industry in which the activity is planned. Indeed, the frequency with which certain kinds of activities have been undertaken at another comparable plant can be instructive in determining whether, for example, an activity never before undertaken, or seldom undertaken, at a unit under review should be regarded as "routine." But it is the frequency of the activity at

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[38] Where actions in one part of an industry would serve to *categorically* exempt like activities elsewhere in the industry, TVA's argument would also appear to represent a departure from a true *case-by-case* review, as contemplated by Agency guidance and the *WEPCO* decision. Indeed, under TVA's approach, it is questionable whether, in view of the extensive work undertaken within the industry even before promulgation of the 1977 NSR regulations, all of which can be consulted as proof of industry practice, the modification program would have had any meaningful practical effect.

[39] The NSPS exclusion for routine maintenance, repair, and replacement differs from the NSR exclusion in that the NSPS regulation includes language requiring a determination from the Administrator before the exclusion applies. *See supra* note 30; *infra* Part III.E.

other *individual* units within the industry that seems to us most relevant in this context. The mere fact that a number of different facilities within an industry may have undertaken these projects strikes us as much less instructive with respect to whether a project under review should be considered "routine," than the observation that this kind of replacement is, for an individual unit, an unusual or once or twice-in-a- life-time occurrence. Further, we find nothing in the 1992 preamble passage that supports TVA's view that such information should be treated as dispositive of routineness.

Notably, in *WEPCO*, the fact that the project had never been done by another entity in the industry was certainly a factor the court referenced. However, the court did not stop its analysis there. Rather, the court cited additional facts as significant in its finding the project to be non-routine, including, "the renovation work items * * * are those that would normally occur only once or twice during *a unit's* expected life cycle." *WEPCO*, 893 F.2d at 912 (emphasis added).

Thus, in our view, the approach advocated by EPA Enforcement more reasonably implements the statutory objectives and the regulatory text in question. *See Fluor v. OSHA*, 861 F.2d 936, 941 (6th Cir. 1988) ("[T]he Commission's interpretation of the regulation better serves the remedial purposes of the [Act].") Unlike TVA's construction, which tends to elevate a single consideration—the occurrence of an activity anywhere else within an industry—above all others, EPA Enforcement's approach examines the full range of considerations contemplated by the four factor test historically embraced by the Agency and adopted by the court in *WEPCO*.

We further find this articulation more consonant with the principle, discussed above, that the exclusion be *narrowly* construed in light of the statutory intent, regulatory construction, and prior case law, including, most notably, the requirement that any regulatory exemption be applied to exclude only "de minimis" activity or for "administrative necessity." *Alabama Power*, 636 F.2d at 400.

We move now to the application of the four factor test to the projects addressed by EPA Enforcement's Compliance Order to determine whether TVA has met its burden of showing that they are routine. To provide context, we first consider a number of preliminary matters, including background information on the nature of facilities affected by the projects at issue, and information regarding TVA's organizational structure and accounting practices that bears on the question of routineness.

3. Application of Routine Maintenance Exception to TVA's Projects

a. Description of the Coal-fired Production of Electricity

The fourteen projects at issue in this case deal mainly with the boilers in nine of TVA's coal-fired plants. Accordingly, some background regarding how the utility industry uses boilers in the generation of electricity and a more detailed description of a typical boiler unit is helpful before discussing the particular changes TVA made to the units at issue in this case.

Each plant that uses coal in the production of electricity has three main sections used to convert the energy from coal into electrical energy: (1) the boiler,

(2) the steam turbine, and (3) the electric generator. Tr. at 52. Each of these sections of the plant is used in one stage of the conversion from coal to electricity. The boiler performs two main functions in this process. This is where (1) coal is combusted and the coal's energy is released in the form of heat and light and (2) heat energy is converted into steam energy. The steam is then directed to the turbine where it is further converted to mechanical energy in the form of a spinning turbine shaft, which in turn drives the generator that produces the electricity. Tr. at 53.

Boilers range in size from a few stories to twelve stories high. Tr. at 54. In general, a boiler is constructed of miles of tubing or piping. Tr. at 53. The walls, roof, and floor are comprised of pipes or tubes, as are the other major components in a boiler. The latter components are suspended within the boiler unit itself and include, for example, the economizer, reheater, primary reheater, primary superheater, secondary superheater, and secondary reheater. Additionally, burners are attached to the boiler. TVA uses cyclone burners[40] at many of its units. The number of burners at a boiler depends on the size of the boiler.

The combustion process generally works as follows. After the coal is ground to the appropriate size for the burners, air suspends the particles and transports them to the burners. Once the coal is ignited in the furnace, it releases energy, gas by-products, and particulate

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[40] TVA uses cyclone burners at many of its units. The burners are attached to the boiler and are used in the coal combustion process.

matter or PM. The gases are collectively referred to as the flue gas.[41]

The various components of the boiler are involved in the absorption process which transfers the heat energy of the coal to steam. The tubes or pipes which form the walls of the boiler are called waterwalls and contain mostly water. The components that are suspended inside the boiler contain mostly steam. The hot gases travel between the pipes that make up these components so that heat energy is absorbed from the flue gases and transferred to the steam contained inside the pipes. Although the exact position of these components varies from one boiler to the next, they function in largely the same manner in all boilers. In short, these components allow the transfer of heat energy from the combusted coal to the steam in the piping.

Because the pipes that comprise the waterwalls and suspended components are in constant contact with the flue gas and/or combusting coal, those pipes are subject to deterioration over the life of the boiler and may develop leaks and require repair, or replacement. As will be discussed below, the projects at issue in this case do not involve the replacement or repair, of an occasional or isolated broken or ruptured pipe, but instead involve the replacement of multiple components, each of which consists of tens of thousands of feet of pipe that had deteriorated to a point where

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[41] The gases produced from the combustion process form carbon dioxide, carbon monoxide, SO_2, and NO_X. Tr. at 63. The flue gases flow through the upper sections of the boiler and exit to the air preheater and then generally to an air pollution control device. From the pollution control equipment the gas enters an induced draft fan, then out the stack and is emitted into the atmosphere. Tr. at 64-65.

breaks and ruptures had become frequent, substantially impairing TVA's ability to run the boiler.

b. *TVA's Long Term Planning*

TVA's historical plans and strategies for creating and maintaining a power supply for its customers provide context for the fourteen TVA projects currently at issue. Throughout the 1960s and 1970s, TVA saw demand for electricity grow. To meet this demand, TVA began planning and constructing seventeen new nuclear power plants. EPA Enforcement Exs. 201; 279, at 3 (Hekking's pre-filed testimony). However, in the late 1970s, TVA's strategy changed dramatically when demand for electricity unexpectedly declined and public support for nuclear power waned. EPA Enforcement Ex. 279, at 3; Tr. at 129. Instead of relying on newly constructed nuclear plants, TVA decided to extend the lives of the coal-fired units originally intended to be replaced by the new nuclear plants. EPA Enforcement Ex. 201. TVA eventually abandoned its nuclear plant construction plans and focused primarily on its older coal-fired units. A 1987 report written by two of TVA's employees for the Electric Power Research Institute describes TVA's strategy:

> The coal-fired units that were expected to be replaced by those cancelled nuclear units will now have to be used at least for the rest of this century. This will require continued reliable operation of all coal-fired units now in service.
>
> If 40 years is assumed to be the useful life of a coal-fired unit, after which the unit would be retired, the oldest TVA plant would retire in 1991. By the year 2000 all 50 units of less than 500 MW would be

> retired, removing a total of 8,250 MW from the system generating capacity. * * * [This] illustrate[s] the need for a comprehensive program to address what is required for each unit to make the equipment perform reliably for another 20 years or more under predicted operating conditions. This program was called the Fossil and Hydro Unit Evaluation and Modernization Program (FHUEM).

EPA Enforcement Ex. 201, at 853-54. The goals of the FHUEM program, which TVA began in 1984, were:

> (1) to extend plant life 20 or more years beyond its design life of 35 to 40 years, (2) to maintain unit reliability and efficiency, and (3) to modernize by utilizing advanced technology.

EPA Enforcement Ex. 201, at 854. The program was not implemented as originally designed in large part because of the expense and the length of time each unit would be shut down for the replacement. *See* EPA Enforcement Ex. 279, at 4-5 (Hekking's pre-filed testimony). However, this program did identify particular components at TVA's coal-fired plants that would require replacement because those components were at the end of their useful lives. *Id.* TVA incorporated its findings under the FHUEM program into its ongoing "Capital Additions and Improvements Program," as discussed more fully below. *Id.* The program was used to fund the replacement of major equipment and their components.

c. *TVA's Organization and Operation*

Before discussing the physical changes made by TVA to the boilers, it is also useful to have a better understanding of how TVA conducted its operations,

especially with respect to its procedures and accounting practices pertaining to construction activities at individual units. At the hearing, EPA Enforcement put two former TVA employees on the stand, Mr. Hekking and Mr. Donald Randolph, who both testified regarding TVA's operations and organization. Tr. at 101-325.

From 1978-1988, TVA had a single division for its coal-fired plants and the hydro plants, the Fossil and Hydro Power Division, within which there was a separate group for the coal-fired plants. *See* EPA Enforcement Ex. 230 ("TVA Fossil & Hydro Organization"). Responsibilities for the coal fired-plants were allocated between the individual plants and the central office in Chattanooga as outlined below.

i. *Operations at the Plants*

At each coal-fired plant, TVA established three primary departments—operations, results, and maintenance. *Id.* The operations department ran the plant, the results department ensured efficiency of the plant, and the maintenance department was responsible for daily maintenance and work necessitated when forced outages occurred. Tr. at 109. Mr. Randolph described the plants' maintenance department duties as follows:

> [T]he plant maintenance department was primarily responsible for the running maintenance, routine maintenance to keep the plant going. They had all crafts people. They had a few engineers, and they dealt with the day-to-day maintenance problems at the plant.

Tr. at 110. Among the kinds of projects that each plant's maintenance department would perform were

such items as fixing a valve leak and replacing a failed tube. *Id.*

ii. *TVA's Central Office*

TVA also had a central office in Chattanooga that contained, among others, a plant maintenance branch. The plant maintenance branch of the central office coordinated with the maintenance departments at the plants on major replacement projects that the plant's maintenance staff alone could not undertake. Tr. at 114. Mr. Randolph characterized the role of the central office's plant maintenance group by stating: "[W]e functioned primarily like a contractor to the plant, only we were an in-house contractor." Tr. at 119.

Within the central office plant maintenance branch was a boiler and auxiliaries ("boiler") group, which was further subdivided into several sections. The engineering section of the boiler group was responsible for assessing boiler problems. Among other responsibilities, it would prepare the necessary paperwork to initiate large construction projects that the maintenance department at an individual plant could not handle. Tr. at 115. High level management approval at the central office was required before any such project could proceed. Tr. at 118. The required approval levels for each project varied depending on the project cost. EPA Enforcement Ex. 279, at 15 (Hekking pre-filed testimony). In the 1980s, TVA required approval by its Board of Directors on all projects over $1 million. *Id.* In the 1990s, Board approval was required for projects over $2.5 million. *Id.*

Following approval of a project, a field supervisor from the construction section, which was also a part of the boiler group, would be assigned to oversee each

project. The construction section was responsible for hiring additional craftsmen needed for each particular project and for overall project implementation. Tr. at 119.

In 1988, TVA reorganized in a way that, among other things, affected the construction section. Thereafter, when the planning and approval of a project was completed, the project was transferred to a new division, the Fossil and Hydro Modification Division, for implementation. Tr. at 123-24.

iii. *The Central Office's Control of These Projects*

As described above and outlined in more detail below, TVA distinguished between projects by placing responsibility for larger construction projects with the central office, while leaving responsibility for smaller projects to each plant's maintenance department. As discussed below, all of the projects at issue in this case were ultimately handled, not by the plant's maintenance department, but by the central office's plant maintenance department. In essence, these were among the largest projects undertaken by TVA at its coal-fired power plants.

d. *TVA's Budgets*

Not only did TVA distinguish between projects by placing responsibility for the larger construction projects with the central office, but TVA's operations further differentiated between projects through the budgeting process. The yearly operation and maintenance budget ("O&M budget") for each plant was used for any projects undertaken by a plant's maintenance department, while the projects planned and implemented by the central office's plant maintenance

branch used money in the capital budget. *See* Tr. at 112, 120. From the record, it appears that the two budgets—the O&M budget and the capital budget—were distinct from one another. Tr. at 120-21.

As early as the 1970s, TVA had a capital additions and improvements ("Capital A & I") program. TVA used this program to fund "replacement of major equipment and some of their components." EPA Enforcement Ex. 279, at 14. TVA's own policy for distinguishing between capital projects (the Capital A & I budget) and maintenance projects (O&M budget), known as its Capitalization Policy, is enlightening:

> In general, projects which add new tangible assets or leave existing tangible assets in better condition for profitable service than when new are given a capital classification (e.g., increase capacity, efficiency, or useful life.) Projects which only restore tangible assets to a former serviceable condition are maintenance.

EPA Enforcement Ex. 152. TVA's Capitalization Policy goes on to further define what is not a capital project:

> A capital classification is *not* given to projects that: inspect, test, assess, and report on the condition of existing tangible assets specifically to determine the need for repairs, replacements, and rearrangements; prevent failure, *restore serviceability*, or *maintain useful life* of existing tangible assets; rearrange or change the location of existing tangible assets; repair or restore existing tangible assets for reuse * * *.

Id. (emphasis added). When TVA classified a project as a capital project, TVA recognized that the project added a new tangible asset or left an existing tangible asset in an improved condition. Thus, under TVA's classification policy, TVA's classification is directly relevant to the purpose of the project—to improve the unit, rather than simply maintain the status quo.

e. *The Projects*

With this as background, we now apply the four factor test EPA historically has used, and which was upheld by the court in *WEPCO*, to the projects at issue in this case. For ease of reference, we have incorporated into this decision in general form EPA Enforcement Ex. 273, which gives a general description of the fourteen projects.[42]

TVA COAL-FIRED PLANT PROJECTS

Plant/Unit/ Date in Service	**Project**	**Cost**	**End Date**
Allen #3 (1959) 330 MW	Redesigned and replaced horizontal reheater. Outage: 3 months.	$10.78 million	1992-93
Bull Run #1 (1967) 900 MW	Replaced economizer and secondary superheater spaced outlet sections in each of 2 furnaces. Outage: 3 months.	$8.3 million	1988

[42] The essence of this exhibit was not seriously contested by TVA.

Plant/Unit/ Date in Service	**Project**	**Cost**	**End Date**
Colbert #5 (1965) 500 MW	Replaced waterwalls and horizontal reheater, modification to the startup system, added wingwalls in the furnace, replaced gas proportioning dampers, replaced windbox, redesigned and replaced control system, and added balanced draft conversion. Outage: 13 months.	$57.1 million	1982-83
Cumberland #1 (1973) 1300 MW	Replaced and redesigned secondary superheater outlet headers, replaced secondary superheater pendant elements and replaced lower slope and lower waterwalls. Outage: 3 months.	$22.91 million	1996
Cumberland #2 (1973) 1300 MW	Replaced and redesigned secondary superheater outlet headers, replaced secondary superheater pendant elements and replaced lower slope and lower waterwalls. Outage: 3 months.	$18.41 million	1994

Plant/Unit/ Date in Service	**Project**	**Cost**	**End Date**
John Sevier #3 (1956) 135 MW	Replaced superheater platen elements, all burner tube panels in both furnaces, and waterwalls in front, rear, and sidewalls of both furnaces. Outage: 2.5 months.	$3.94 million	1986
Kingston #6 (1955) 200 MW	Replaced all reheater and superheater intermediate pendant elements, waterwalls of superheater and reheater furnaces. Outage: 2 months.	$2.6 million	1989
Kingston #8 (1955) 200 MW	Replaced all reheater and superheater intermediate pendant elements, waterwalls of superheater and reheater furnaces. Outage: 3 months.	$2.9 million	1989-90
Paradise #1 (1963) 770 MW	Replaced all 14 cyclones and lower furnace walls, floor and headers. Outage 6.5 months.	$16.3 million	1985
Paradise #2 (1963) 770 MW	Replaced all 14 cyclones, lower furnace walls, floor and headers. Outage: 4.5 months.	$15.79 million	1985-1986

Plant/Unit/ Date in Service	**Project**	**Cost**	**End Date**
Paradise #3 (1970) 1150 MW	Replaced all 23 cyclones and lower furnace walls, floor and headers. Outage: 6 months.	$29.44 million	1985
Shawnee #1 (1953) 175 MW	Replaced secondary superheater and reheater pendant elements and crossover elements, including header stubs. Outage: 3 months.	$4.5 million	1989-90
Shawnee #4 (1953) 175 MW	Replaced secondary superheater and reheater pendant elements and crossover elements, including header stubs. Outage: 2 months.	$5.1 million	1990
Widows Creek #5 (1954) 141 MW	Replaced secondary superheater and crossover elements, and reheater and crossover elements. Outage: 4 months.	$4.13 million	1989-90

In the discussion that follows, we cite to the facts in the record that are most significant in determining whether TVA's projects were routine maintenance, repair, and replacement using the four factor approach identified above. We further address the main points that EPA Enforcement and TVA raise in support of their respective arguments.

On balance, as indicated below, we conclude that TVA has not met its burden of establishing by a pre-

ponderance of the evidence that the nature and extent, purpose, frequency, and cost of these projects was such that they fell within the regulatory exception for routine maintenance, repair, or replacement.[43] Our judgment is informed by all the evidence in the record, the totality of which is insufficient to establish that these projects properly fall within the scope of this exception.

Our general findings under the four factor test are stated below. Further detail regarding our findings on a project-by-project basis can be discerned from Appendix A to this decision, which catalogues our findings for each of the fourteen projects in question. In finding that TVA has failed to carry its burden of proving that its projects fall within the exception for routine maintenance, repair, and replacement, we find material the following facts:

1. Nature and Extent

- The construction activities involved in these projects affected significant boiler components and typically was massive, including in some cases the construction of onsite railroads and monorails and the replacement of miles (in one instance 67 miles) of tubing.

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[43] While we have held that TVA bears the burden of proof on this issue, we do not see our conclusion here as hinging on our burden of proof ruling. Indeed, the evidence is such that, even if EPA Enforcement had the burdens of production and persuasion to establish that each of the fourteen projects did not constitute routine maintenance, repair, or replacement, those burdens would be met.

- TVA's central office, including staff from its construction and (after 1988) modification group developed and carried out the projects, rather than the maintenance department located at each plant.

- The projects took many years to plan, in most cases well beyond the time associated with planning TVA's scheduled maintenance outages which took place approximately every eighteen months. Moreover, these projects required TVA's Board of Director's approval, whereas plant managers approved the projects handled by the maintenance departments at TVA's plants. Tr. at 112.

- Implementation of the projects required plant shutdowns of many months (ranging from two to thirteen months), substantially in excess of the time period typically associated with forced outages which lasted a few hours to five days. Significantly, these projects also required substantially more time to complete than was typically required for TVA's scheduled maintenance outages which occurred every eighteen months and usually required the shutdown of a unit for approximately four weeks. *See* Tr. at 225.

2. Purpose

- The purpose of the projects generally was to significantly extend the life of the unit in question by as much as twenty years.

- All projects were classified as "capital" rather than as "maintenance" projects. TVA's Capitalization Policy provides such classification for projects that add tangible new assets or leave existing assets in "better condition" than when the original asset was installed for profitable service, but defines as maintenance projects those projects that merely restore tangible assets to serviceability.[44]

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[44] The Board has reviewed TVA's arguments against using the capital classification as a relevant factor in evaluating whether the projects fall within the routine maintenance exception. TVA argues that:

> [its] decisions with respect to accounting for plant-related expenditures are based on the application of generally accepted accounting principles ("GAAP") and the accounting guidelines promulgated by the Federal Energy Regulatory Commission ("FERC") under the Uniform System of Accounts ("USoA"). * * * Neither GAAP nor the USoA provide a working definition of "routine" for purposes of accounting for plant-related expenditures.

TVA Post-Hearing Brief at 36-37. We agree that, by itself, the capital classification would not determine what activities are or are not "routine" under NSR. However, due in large part to TVA's own distinction between the capital and maintenance classification in its Capitalization Policy, *see* EPA Enforcement Ex. 152, which is consistent with the FERC USoA rules, we believe the designation does provide some insight into the purpose, as well as the nature and extent, of the projects since TVA's classification recognized whether a project was intended to improve a unit or merely maintain it. *See* EPA Enforcement Ex. 152. Furthermore, in determining whether each project falls within the scope of the routine maintenance exception, our review not only looks at whether TVA classified a project as a capital project, but also looks to other related facts in the record. Thus, in the TVA context, large capital projects were centrally managed, required years of

3. Frequency

- As in the *WEPCO* case, these replacements had generally never before been performed on these units and were considered to be rare replacements for such units.
- Although TVA introduced evidence that it and others in the industry had made similar replacements at other facilities, the evidence did not show that these replacements were other than uncommon in the lifetime of a unit.

4. Cost

- All projects cost in excess of $2.5 million (ranging from $2.6 million to $57.1 million) and required approval of TVA's Board of Directors.[45]

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planning, and required high-level approval. Collectively, this information bears on our determination whether the projects are "routine" under NSR.

[45] The Board has generally not relied on the testimony given by Mr. Michael Majoros, an EPA Enforcement witness, regarding the relative costs of each project to the unit's original cost. TVA objected to his analysis. We find TVA's objection to this aspect of his testimony to be generally valid since Mr. Majoros compared only "nominal" dollar, not real dollar values in all except two projects. This being said, we did not find the evidence adduced by TVA regarding relative costs to be particularly helpful either. TVA compared the cost of each project for a single boiler to the cost of the plant's entire boiler system, which contains many units.

Mr. Majoros did convert the dollars for Shawnee Unit 1 and Paradise Unit 1 from nominal to real dollars. We find Mr. Majoros' testimony useful in these instances, and, after reviewing the record, are in these instances unconvinced as to TVA's charge that

- The cost of implementing these projects would have consumed most of each plant's O&M budget and in some cases would have exceeded the plant's O&M budget.

TVA disputes a number of these considerations. For example, TVA disputes the relevance of its division of responsibility between its plants and the central office.[46] Particularly, TVA argues that it chose to centralize certain duties for efficiency and, therefore, the fact that the projects at issue were managed by its central office is irrelevant to the determination of a project's routineness. Since the size of the project appears to bear materially on the decision whether to manage the project out of the central office, and smaller projects were generally thought of as "running or routine maintenance" and given to the plant's maintenance department to undertake, we cannot agree that this consideration is irrelevant. While this consideration alone may not be dispositive, taken in conjunction with other facts, it does support a finding that the

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his testimony is inaccurate. After Mr. Majoros corrected his reference to Account 312, and instead referred to Plant Unit Number ("PUN") 167-1, his testimony appears accurate. Indeed, TVA's accountant, James Callahan, testified that Mr. Majoros' numbers appeared accurate. Tr. at 886-87.

[46] In its Post-Hearing Brief, TVA argues that its use of central office staff in implementing these projects is not a relevant fact in determining whether those projects are routine since plant maintenance staff were also used on capital projects. TVA Post-Hearing Brief at 23. However, in reviewing the record in the matter, the Board finds persuasive the fact that use of plant maintenance personnel for capital projects occurred only with "small capital projects" and that the larger construction projects were handled by TVA's central office. *See* Tr. at 195. Thus, TVA distinguished between projects of a certain magnitude and scope.

projects under review here are outside the routine maintenance exception.

TVA also takes issue with EPA Enforcement's use of the length of time TVA took to plan each project. TVA argues that since the *WEPCO* court did not use this fact in deciding the *WEPCO* project was nonroutine, EPA Enforcement should not use this fact either. We believe the length of time a project takes to plan and approve can be relevant to the four factor test because it goes directly to the nature and extent of the project. Where, as here, project planning takes months, sometimes years, beyond the planning necessary for regular, ongoing maintenance, this fact creates an inference that the project is not "routine" because such a long planning and approval process is needed.

As discussed more fully below, TVA's principal defense—that it had become common practice at TVA and generally within the industry and thus "routine" in this industry, to make such once or twice-in-a-lifetime replacements—is alone not enough to carry TVA's burden to establish that these projects fit within the narrow regulatory exception for routine maintenance, repair, and replacement. Nor are we persuaded that only replacements of the magnitude of those at issue in *WEPCO* are outside the scope of the routine maintenance exception. As EPA argues persuasively, *WEPCO* did not set a minimum floor below which a project comes within the scope of the exception. Rather, the determination is made on a case-by-case basis applying a reasonable test which evaluates nature and extent, purpose, frequency, and cost.

In approaching the question of what is routine, there is nothing in the regulatory history of the routine maintenance exception that calls for us to leave com-

mon sense behind. The testimony at the hearing of two former TVA officials[47] lends striking support for the common sense test that we are following. Donald Randolph, former manager of TVA's central Boiler Equipment Section and an employee of TVA for over fifteen years, and Alan Hekking, a former TVA plant manager and an employee of TVA for more than twenty years, both testified that projects of the kind at issue in this case were not "routine maintenance" in their understanding of that term.[48] For example, on cross-examination, Mr. Randolph testified as follows:

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[47] During his fifteen years with TVA, Mr. Randolph held various positions including: section supervisor of the valve and heat exchanger section in the plant equipment branch of the Fossil and Hydro Power Division at the central office, and manager of the plant boiler equipment department within the same division. Mr. Randolph is currently self-employed as a consulting engineer and analyzes failures and welding problems. Tr. at 102-07.

During Mr. Hekking's twenty years at TVA he held various positions and titles including: mechanical maintenance supervisor at the Johnsonville Plant, assistant plant superintendent at the Allen plant, plant manager at the Allen plant, and an interim position as manager of fossil operations. Mr. Hekking currently works for the Memphis and Shelby County Health Department as a supervisor of the Title V/Major Source Group in Pollution Control and as an independent consultant for EPA Enforcement in this matter. EPA Enforcement Ex. 279, at 1; Tr. at 264-265.

[48] TVA has attempted to discount Mr. Randolph's and Mr. Hekking's testimony on the question of what is routine by pointing out that each had prepared a planning report for a capital project which checked in the affirmative a box stating, "Routine Improvement of Existing TVA Facilities." According to TVA, this reflected that these witnesses had changed their interpretation of routine maintenance over time. TVA Post-Hearing Brief at 17-19. Mr. Hekking was not asked about the alleged inconsistency in cross-examination. Mr. Randolph was, however, and refused to equate "routine improvement" with "routine maintenance." Given

> Q. Now, if you assume that routine means customary in the industry, standard operating procedure, would you then agree that it is a routine maintenance strategy in the industry and for TVA to perform the type of maintenance, repair, and replacement that we have been discussing here by TVA?
>
> A. I do not consider these major replacement projects routine maintenance. That [sic] is *major* maintenance projects.
>
> * * * *
>
> Q. Would you agree here that routine improvement refers to, in this particular case, a routine replacement to TVA?
>
> A. The problem I would have with that, this is the first time in 36 years and it is hard for me to say that is routine.

Tr. at 192-93, 196-97. Mr. Hekking had a complementary view. On direct, he testified as follows:

> Q. When this project [Allen Unit 3] was implemented back in 1992 and 1993, Mr. Hekking, did the Tennessee Valley Authority consider this project to be routine maintenance or routine repair or routine replacement?
>
> A. No, sir.
>
> Q. Can you tell us why?

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this fact, and the fact that it is not apparent to us that these are, in fact, equivalent terms, we are not inclined to disregard the testimony of these witnesses.

> A. A number of reasons. * * * The money spent on this one project alone exceeded my annual budget. I think that is one reason it wasn't routine. It was performed during an outage. I told you that a routine scheduled outage for us was four weeks. This was a 12-week outage. That was not routine. The reheater that we put back in, we replaced an entire component. It wasn't a tube or several tubes or couple of elbows, it was an entire component, a large component. That was not routine.

Tr. at 246-47. On cross-examination, Mr. Hekking continued:

> Q. In your opinion does the number of reheaters replaced in the industry, let's say—let's talk about reheaters because that's what you talked about at the Allen plant. Let's say that there were 100 reheaters replaced in the entire industry or 200 or 300 or 500; does that make it routine maintenance or routine replacement?
>
> A. No sir. If it's replaced once in its lifetime of 30 years, that's not routine.

Tr. at 324.[49]

As we have said, we do not believe that Congress in the statute or EPA in its underlying regulations excluded such carefully planned, massive rebuilding

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[49] For its part, TVA's witnesses, e.g. Jerry Golden and Gordon Parks, offered the view that these projects were routine principally because they had been undertaken elsewhere in the industry. *See* TVA Ex. 4. They did not refute Mr. Randolph's and Mr. Hekking's premise that the projects under review here were highly unusual in the life of a given unit and fell outside the scope of regular maintenance practice at individual units.

efforts from the requirements to obtain a permit and put on appropriate pollution controls. Although numerous activities properly fall within the exception for routine maintenance, repair, and replacement,[50] to conclude that these activities are within its scope would stretch the exception beyond reason. For these kinds of physical changes at existing facilities, Congress made a judgment that in order for the projects to proceed they must be balanced with careful up-front review designed to protect the environment. It is hardly surprising that where, as here, major changes are being made to the boiler, modifications can simultaneously be made to the boiler's flue gas ducts, where the pollution control equipment is typically located. Accordingly, these modification projects are a natural and efficient occasion to upgrade pollution control equipment. Any other result would, in our view, constitute a "perpetual immunity" for existing plants, a result flatly rejected by

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[50] The record supports the conclusion that activities undertaken in short-term forced outages (typically five days or less) and most maintenance undertaken as part of regular planned maintenance outages (four-week outages occurring every eighteen months) will typically fall within the ambit of "routine." *See, e.g.*, Tr. at 109-10, 242-43. For example, in characterizing the kind of routine maintenance undertaken by plant maintenance staff, Mr. Randolph stated as follows:

> There was all kinds of stuff. * * * [I]f a valve started leaking, it would be up to them to repack that valve, maintain it, get it back into the proper order. If the boiler went into emergency outage, forced outage, boiler tube ruptured, blew, it would be up to them and when the unit came off-line to get in there, cut that tube out, put a Dutchman or replacement tube in, and get it repaired and get back on-line.

Tr. at 110.

Congress and the circuit courts in *Alabama Power* and *WEPCO*.

In sum, the Board finds, based on its application of the four factor test—nature and extent, purpose, frequency, and cost—to the evidence in the record of this case, that none of the fourteen projects before the Board qualifies for the routine maintenance exception.[51]

4. *Fair Notice and Rulemaking Arguments*

TVA raises two defenses to the application of the exception for routine maintenance, repair, and replacement, as we are interpreting that phrase. First, TVA argues that it did not have fair notice of this interpretation because it was not "ascertainably certain" either from the regulations themselves, or from EPA's statements regarding those regulations. TVA Post Hearing Brief at 91-98. Further, TVA argues that EPA has changed its interpretation of the routine maintenance, repair, and replacement exception without the requisite notice and comment rulemaking and that retroactive application of EPA's new interpretation would be unfair, given TVA's alleged reliance on EPA's prior interpretation in performing the projects. *Id.* at 44-46. For these reasons, TVA argues, the Board must withdraw the Compliance Order.

a. *Fair Notice*

TVA argues that EPA's interpretation of the regulatory exception was not "ascertainably certain" and did not provide TVA with fair notice. *See* TVA Post-Hearing Brief at 81-106. Accordingly, based on the case law discussing the need for fair notice in the

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[51] *See supra* Part III.C.3.e (summary of our findings).

regulatory arena, TVA concludes that it cannot be liable for violating any preconstruction permitting requirements of the Act. For the following reasons, TVA's contention that it lacked fair notice must be rejected.

The Supreme Court has stated, "[R]egulations affecting only economic interests must be sufficiently definite so that ordinary people exercising common sense will know what they mean." *Boyce Motor Lines v. United States* 342 U.S. 337, 340 (1952). In further expressing the idea of the need for fair notice to the regulated community, the D.C. Circuit has observed:

> [W]e must ask whether the regulated party received, or should have received, notice of the agency's interpretation in the most obvious way of all: by the reading of the regulations. If, by reviewing the regulations and other public statements issued by the agency, a regulated party acting in good faith would be able to identify, with 'ascertainable certainty,' the standards with which the agency expects parties to conform, then the agency has fairly notified a petitioner of the agency's interpretation.

General Elec. Co. v. EPA, 53 F.3d 1324, 1329 (D.C. Cir. 1995).

Significantly, providing fair notice does not mean that a regulation must be altogether free from ambiguity. Indeed, the case law shows that even where regulatory ambiguity exists, the regulations can still satisfy due process considerations. *See, e.g., Texas Eastern Prod. Pipeline Co. v. OSHA*, 827 F.2d 46 (7th Cir. 1987). In this regard, the D.C. Circuit has observed:

> While interests furthered by the Due Process Clause and the First Amendment favor such regulation by bright lines, we are quite unprepared to hold that the Due Process Clause prohibits a contextual regulation. Reading such a requirement into the Clause would likely invalidate most criminal statutes and administrative regulations.

United States v. Thomas, 864 F.2d 188, 198 (D.C. Cir. 1988). Thus, the question is not whether a regulation is susceptible to only one possible interpretation but rather whether the particular interpretation advanced by the regulator was ascertainable by the regulated community.

In its prior cases examining such issues, the Board has stated that in determining whether notice has occurred one should first look to the language of the regulations. "[T]he analysis would next proceed to a determination of whether the Region's interpretation embodied in the rule or statement was reasonable in light of the language of the regulation and the overall structure of the regulatory scheme." *In re CWM Servs., Inc.*, 6 E.A.D. 1, 18 n.28 (EAB 1995); *see also In re B.J. Carney Indus.*, 7 E.A.D. 171, 195 (EAB 1997) (holding that the regulatory definition of "process wastewater" is sufficiently clear to give an ordinary person reasonable notice of prohibited conduct), 192 F.3d 917 (9th Cir. 1999), *vacated as moot*, 200 F.3d 1222 (9th Cir. 2000); *In re V-1 Oil Co.*, RCRA (9006) Appeal No. 99-1, slip op. at 30-34 (EAB, Feb. 25, 2000), 8 E.A.D. ___ (applying standards set forth in *General Electric Co.*, 53 F.3d at 1329, to reject fair notice affirmative defense). Accordingly, we regard the statutory and regulatory context within which a regulation was promulgated as highly instructive in determining

whether a meaning ascribed to the regulation was ascertainable.

In the present case, TVA states that EPA's further statements on the subject, particularly in the form of the NSPS exception for routine maintenance and the preamble to the 1992 amendments to the NSR rule, did not communicate the interpretation that EPA Enforcement is embracing in this case with "ascertainable certainty." Additionally, TVA cites to the privilege log,[52] produced by EPA Enforcement for this matter, to infer that because EPA Enforcement asserts a deliberative process privilege over certain documents pertaining to the exception, there must be continuing uncertainty regarding the interpretation inside the Agency. If EPA itself is uncertain about its meaning, then surely, according to TVA, its interpretation could not have been ascertainable by the regulated community. *See* TVA Post-Hearing Brief at 97-99.

We have difficulty accepting TVA's premise that the regulatory text fails to adequately put the regulated community on notice of the interpretation that we are following here. As discussed in Part III.C.2, when the context within which this regulatory exception rests is considered, the interpretation that we are following is not at all difficult to distill. As we have discussed at length, this context includes Congress' sweeping coverage under the CAA of "*any physical change*" (emphasis added) at existing facilities; the fact that this exception is expressly provided for only by the regulations, not the text of the Act; *Alabama Power's* holding that

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[52] The privilege log refers to a log produced by EPA Enforcement to TVA during this reconsideration process containing a list of documents that EPA Enforcement has withheld on the grounds of privilege.

regulatory exclusions under the NSR program were available to the Agency only where it could demonstrate the exempted activity was de minimis or of administrative necessity; and the notion articulated in *Alabama Power* and *WEPCO* that the grandfathering accorded existing sources was not intended to allow "perpetual immunity" from NSR. TVA was hardly unaware of this context. To the contrary, it is a sophisticated entity, represented by experienced counsel that has actively participated in rulemaking, and other activities pertaining to the CAA. *See* Tr. at 711-13; EPA Enforcement Post-hearing Brief, Attach. J and K.[53]

As we have also discussed, by contrast, the alternative interpretation that TVA advances, which looks to whether a project has been undertaken elsewhere in the industry or in any one of TVA's plants, is fundamentally at odds with that context and, accordingly, unnaturally strains the regulatory text of the exception in question. Further, the phrase "routine maintenance, repair, and replacement" is itself entirely consistent with the meaning which emerges from a contextual reading. Indeed, even without benefit of context, the use of the word "routine" puts the reader on notice that irregular or unusual activities may not qualify. Although TVA asserts that the exception cannot be read to require anything more than proof that a like

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[53] *See also United States v. City of Menominee*, 727 F.Supp. 1110, 1122 (W.D. Mich. 1989) (Defendant is disingenuous to assert that it assumed "all was well," when defendant is a sophisticated corporate player, represented by experienced counsel, heavily involved in activities that are pervasively regulated. Under these circumstances, the defendant should have inquired as to which permit governed its activities.).

project has occurred somewhere in the industry in order for such an activity to be considered "routine," the notion that in determining what is routine one should include as an important consideration the significance of the activity in the life of the unit at issue or other comparable units in the industry does not, in our view, add unascertainable gloss to the regulation's text.

TVA points to the language in the preamble to the 1992 amendments to the NSR rule referencing the need to evaluate "whether a given type of equipment has been repaired or replaced by sources within the relevant industrial category," *see* 57 Fed. Reg. 32,314, 32,325 (1992), and to a similar reference in the NSPS regulations[54] to support its conclusion that the regulation has a singular focus, that being whether the activity has been undertaken somewhere else within an industry. As we have already discussed, we are not persuaded that TVA's restatement of these references represents their only, or more natural, reading. *See supra* Part III.C.3. Indeed, the 1992 preamble reemphasized that the determination was a case-by-case one. *See* 57 Fed. Reg. at 32,325 (1992). Moreover, the interpretation that we are embracing accepts as an essential ingredient the idea that determining routineness must consider the industrial context of the activity at issue. But it also goes on to look at the four factors

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[54] "The following shall not, by themselves, be considered modifications under this part: (1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category, subject to the provisions of paragraph (c) of this section and § 60.15." 40 C.F.R. § 60.14(e). As discussed in reference to TVA's prior cite to the NSPS regulations, they are not applicable to the PSD and nonattainment NSR permitting requirements and, thus, are not relevant in this context.

—nature and extent, purpose, frequency, and cost—in light of the industry in which the activity occurs.

We are likewise not persuaded that the mere fact that EPA's privilege log includes deliberative documents that may discuss the routine maintenance exception indicates that the interpretation that we are following was not ascertainable to TVA. Whether or not there are ongoing deliberations regarding how to implement this aspect of the New Source Review Program says ultimately very little about what was ascertainable to TVA.

At bottom, it is difficult for us to see how TVA can credibly argue that it could not have foreseen that projects of the magnitude of those at issue here might be determined to be nonroutine. Indeed, as early as 1984, a TVA official stated, "If modifications proposed are extensive enough to be considered reconstruction EPA might try to apply the new source performance standards." *See* EPA Enforcement Ex. 139, at 8922750. There was, in our view, ample notice to TVA that it was engaged in conduct that would be questionable, when examined under the four factor, case-by-case inquiry referenced in Agency guidance and ultimately adopted as reasonable by the court in *WEPCO*. Indeed, there is the appearance here that, rather than confused, TVA was simply assuming a calculated risk.[55] As the D.C.

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[55] It may well be that TVA's choice to assume the risk was influenced by the fact that, historically, EPA had not pressed the point through enforcement actions. *See* TVA Response to Initial Brief at 27, 38. But EPA's alleged lack of enforcement is immaterial to TVA's claim that it did not have notice of the regulation's import since the regulatory provision on its face should have provided TVA with appropriate notice. Moreover, it does not explain TVA's choice never to seek a determination from the

Circuit observed in another setting, "[I]t is not unfair to require that one who deliberately goes perilously close to an area of proscribed conduct shall take the risk that he may cross the line." *DiCola v. FDA*, 77 F.3d 504, 508 (D.C. Cir. 1996) (citation omitted).

We also find it striking that TVA is unable to point us to a single instance in which, notwithstanding the magnitude of the projects that it was undertaking, it sought a determination from the relevant regulatory agency regarding the applicability of the routine main-

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Agency concerning any of its projects. *See* discussion in Part III. C.4.a.

Although TVA does not raise an estoppel argument with regard to EPA's alleged lack of enforcement, it is worth noting that such arguments typically fail as a matter of course since a lack of enforcement generally does not rise to the level of "affirmative misconduct" by the government. *See In re B.J. Carney Indus.*, 7 E.A.D. 171, 197 (EAB 1997) ("the Region's conduct [of a five-year delay initiating its enforcement action] did not rise to the level of 'affirmative misconduct' necessary to meet the heavy burden of estopping the government, and hence it must fail."), 192 F.3d 917 (9th Cir. 1999), *vacated as moot*, 200 F.3d 1222 (9th Cir. 2000); *In re Newell Recycling Co.*, TSCA Appeal No. 97-7, slip op. at 43 (EAB, Sept. 13, 1999), 8 E.A.D.__ (Region's commencement of enforcement action after a period of inaction did not give rise to an estoppel against the government). Similarly, laches, which TVA does raise in its Answer but has not argued in its briefs, is not an affirmative defense that in general can be raised successfully against the government. *See Nevada v. United States*, 463 U.S. 110, 141 ("the Government is not in the position of a private litigant or a private party"); *FDIC v. Husey*, 22 F.3d 1472, 1490 (10th Cir. 1994) (the general rule is that the United States is not subject to the defense of laches); *Bostwick Irrigation Dist. v. United States*, 900 F.2d 1285, 1291 (8th Cir. 1990) ("[W]e have recognized the long-standing rule that laches does not apply in actions brought by the United States.").

tenance exception to these projects.[56] TVA argues that its failure to do so is irrelevant. In this regard, TVA cites *Hoechst Celanese*, a district court decision from South Carolina, as supporting TVA's argument that it was under no compunction to seek clarification from the Agency. However, a close reading of the district court's decision reveals that the case does not stand for the proposition that the failure to inquire is irrelevant to a fair notice inquiry. In *Hoechst Celanese*, the defendant in an EPA enforcement action had, in fact, sought prior clarification from a state agency with delegated authority from EPA and had acted in reliance on the state's interpretation. The court merely found that because the company made an inquiry to the state agency, further inquiry to U.S. EPA was not required. *United States v. Hoechst Celanese Corp.*, 964 F. Supp. 967, 982 (D. S.C. 1996), *rev'd on other grounds*, 128 F.3d 216 (4th Cir. 1997), *cert. denied*, 524 U.S. 952 (1998).

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[56] It is commonplace for sources regulated under the CAA to seek applicability determinations in circumstances of uncertainty. The regulations provide for such determinations, *see* 40 C.F.R. § 60.5; 57 Fed. Reg. 32,314 (1992), and EPA has encouraged their use. 57 Fed. Reg. at 32,332 (1992) ("The EPA anticipated, however, that questions will arise regarding certain aspects of this proposal. Because some instances involve discrete judgments, utilities may wish to obtain determinations of applicability. The EPA will provide such determinations upon request * * *."). Indeed, *WEPCO* emerged from a 1988 EPA applicability determination. *See WEPCO*, 893 F.2d 901; *see also* Cyprus Casa Grande Corp. Supplemental PSD Applicability Determination (1987). We note that, apart from the absence of a TVA-specific determination, TVA has not pointed us to any other EPA applicability determination sufficiently on point to bring meaningful support to TVA's argument that its activities fall safely within the ambit of "routine."

The absence of an inquiry by TVA is, in our view, a relevant consideration in determining the availability of a fair notice defense in a case like this where the regulation's text and context put TVA on notice that significant projects might well be determined not to be routine maintenance, repair, and replacement. *See Fluor Constructors, Inc. v. OSHA*, 861 F.2d 936, 942 (6th Cir. 1988) ("If in doubt as to the nature of the lifeline requirement Fluor should have taken the safer position and installed separate lifelines, * * * or at least inquired of OSHA * * *."); *Texas Eastern Prod. Pipeline Co. v. OSHA*, 827 F.2d 46 (7th Cir. 1987) ("The regulations, while not models of clarity, should not have been incomprehensively vague to Texas Eastern. Texas Eastern made no inquiry.").

In sum, we find that TVA did have fair notice of the interpretation of the regulatory exception for routine maintenance, repair, and replacement that we are following in this case. We find that the interpretation was "ascertainably certain" from both the regulation's text and its context. Moreover, given the magnitude and circumstances of the projects at issue here, TVA reasonably should have been on notice that these projects may not qualify for the routine maintenance, repair, and replacement exception. To the extent that, notwithstanding this ascertainable certainty, TVA was unsure of its regulatory obligations pertaining to the projects, it should have sought clarification from the Agency. Failing to do so, it cannot credibly argue surprise as a result of the Agency's actions.

b. *New Rulemaking*

TVA makes the related argument that interpretation of the exception that we are following is a new interpretation and, therefore, requires notice-and-comment rulemaking before it can be applied. TVA Post-Hearing Brief at 44. To do otherwise, TVA maintains, would be manifestly unfair because TVA has relied on EPA's prior interpretation in undertaking past projects at its plants.

The starting point in addressing TVA's argument is to determine whether EPA did, in fact, change its interpretation. We conclude that the evidence in the record of this case does not support TVA's contention that EPA has changed its interpretation. Accordingly, we do not reach the legal question whether EPA was required to initiate notice-and-comment rulemaking to effectuate an interpretive change.

TVA has cited to a number of documents that it argues show that EPA once had a different interpretation of the regulation. These documents include a 1986 article entitled, "Extended Lifetimes for Coal Fired-Power Plants: Effect Upon Air Quality," written by two EPA staff employees; a General Accounting Office's ("GAO") 1990 Study on Electricity Supply; a draft 1990 report prepared for EPA by a contractor entitled, "Comparison of the Economic Impacts of the Acid Rain Provisions of the Senate Bill (S.1630) and the House Bill (S.1630) (sic)"; a 1989 letter from ICF Resources Inc., an EPA contractor, responding to an inquiry by the Edison Electric Institute; a 1994 draft document prepared by EPA for circulation to stakeholders for comment; and a portion of a transcript from a May 2000 American Bar Association ("ABA") panel

discussion.[57] *See* TVA Response to Initial Brief atts. O-P, T-U; TVA Post-Hearing Brief att. F.

We note at the outset two important weaknesses pertaining to the statements cited by TVA. First, with the possible exception of the 1994 draft notice, none of these statements can be taken as authoritative statements by the Agency. The GAO Report, for example, is unclear as to the source of the commentary that it references. The other statements are by Agency staff and contractors having no colorable authority to offer the Agency's official view on the subject.[58] Thus, for example, the article written by EPA employees explicitly states that the views expressed in the article are the personal views of the authors and do not represent the opinions of EPA.

The second weakness is that, of the documents cited, only the 1994 draft document to stakeholders explicitly addresses the routine maintenance, repair, and replacement exception, and we have questions concerning its relevance in this regard. The draft document that was circulated to stakeholders included draft regulatory text which allegedly would have written into the regulation specific criteria for determining what constitutes

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[57] The 1994 draft document appears to be an EPA draft regulatory provision regarding the interpretation of the routine maintenance exception under NSR. The document was apparently circulated among EPA stakeholders for comment.

[58] With regard to the portion of the May 2000 ABA panel discussion, we are unswayed by the material provided to the Board. The discussion is not provided in full, and therefore, the context of the discussion cannot be determined, nor can we determine precisely to what the speaker is referring. Further, the informal discussion of a mid-level EPA employee cannot speak for the Agency. *See Paralyzed Veterans v. D.C. Arena*, 117 F.3d 579, 587 (D.C. Cir. 1997), *cert. denied*, 523 U.S. 1003 (1998).

"routine" under the NSR regulations. *See* TVA Post-Hearing Brief att. F. As TVA notes, after "industry participants objected to the suggested definition, * * * EPA did not include the 1994 draft in its 1996 proposed NSR rule." TVA Post-Hearing Brief at 44. In TVA's view, this reveals that EPA was advancing a new interpretation of the regulations but failed to promulgate it. We think this reads too much into EPA's action. The fact that EPA may have been considering regulatory changes to make the definition of routine maintenance more explicit does not mean that it was changing its interpretation. It is equally plausible that the changes were confirmatory in nature, restating with greater particularity the Agency's preexisting interpretation.[59]

By implication, TVA argues that the Agency's prior view was the one espoused by TVA in this case. We have difficulty finding that any of the cited statements provides support for TVA's view that the Agency's analysis of routineness is limited to assessing whether a given project has been undertaken before somewhere else in the industry.

In sum, based on the limited references that TVA has cited, we are unprepared to find that EPA had earlier

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[59] Notably, TVA's suggestion that it was because of industry opposition that the Agency did not proceed with its more-specific definition of the routine maintenance exception is also open to question. In explaining its decision to drop the initiative, EPA explained that this was because "[w]ith other changes being made to NSR applicability, this issue becomes less important." EPA Enforcement Reply Brief, att. E (Letter from Mary D. Nichols, Assistant Administrator for Air and Radiation, U.S. EPA, to William H. Lewis, Morgan, Lewis and Bockius (May 31, 1995)).

espoused an interpretation contrary to the one that we are following here.

D. *The Statutory Emissions Increase Requirement as Generally Applied in the PSD Programs (State and Federal)*

Having determined that a "physical change" was made at each of the fourteen coal-fired power units at TVA's nine electrical generating plants, we turn now to the second part of the statutory two-part test under the definition of "modification." It requires a demonstration that the physical change resulted in an increase in emissions of a regulated pollutant. In particular, the statutory definition, with emphasis on the emissions increase requirement, is as follows:

> The term "modification" means any physical change in, or change in the method of operation of, a stationary

source *which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.*

CAA § 111(a)(4), 42 U.S.C. § 7411(a)(4) (emphasis added). The regulations for the different programs (NSPS, SIPs, federal PSD, and federal nonattainment NSR) interpret and elaborate on this general statutory emissions increase requirement with detailed provisions.

We note at the outset that the regulations promulgated by EPA implementing the emissions increase test are different for NSPS and NSR. EPA succinctly described this difference in the preamble to NSR rule amendments promulgated in 1992:

> In the first step, which is largely the same for NSPS and NSR, the reviewing authority determines whether a physical or operational change will occur. If so, the reviewing authority proceeds in the second step to determine whether the physical or operational change will result in an emissions increase over baseline levels. In this second step, the applicable rules branch apart, reflecting the fundamental distinction between the technology-based provisions of NSPS and the air quality-based provisions of NSR.

57 Fed. Reg. 32,314, 32,316 (1992) (footnote omitted); *see also WEPCO*, 893 F.2d at 913 (noting that "each program [NSPS and PSD] measures emissions in a fundamentally distinct manner").

In this part of our decision, with one exception, we review the NSR regulatory requirements (both the federal program and the applicable state SIPs) regarding the emissions increase test and apply those requirements to the specific projects and pollutants which EPA Enforcement alleges in its Post-Hearing Brief are at issue in this case.[60] We will also address TVA's argument that the statute requires application of the NSPS emissions increase test as part of all PSD and nonattainment NSR programs. One alleged NSR violation that will not be considered in this Part III.D is the SO_2 violation for Colbert Unit 5, which is governed by the Alabama nonattainment NSR program as it existed prior to amendment in 1983. The emission increase test under the pre-1983 Alabama nonattain-

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[60] *See supra* Part III.A (identifying claims that were abandoned by EPA Enforcement in its Post-Hearing Brief and identifying the pollutants at each unit that remain at issue).

ment NSR program is similar to the federal NSPS emissions increase test and, therefore, will be discussed in Part III.E below along with the alleged NSPS violations at Colbert Unit 5.[61]

1. *Identification of the TVA Units and the Applicable State and Federal Regulations Discussed in This Part*

As noted above, the violations alleged in this case occurred between 1982 and 1996 at fourteen generating units located at nine coal- fired power plants in the states of Alabama, Kentucky, and Tennessee. At various times and for different pollutants, these three states had EPA-approved SIPs and were the applicable permitting authorities. In addition, at some points in time for some pollutants, the applicable permitting program was the federal PSD program. This array of different permitting programs, however, has not resulted in substantially different permitting requirements. To the contrary, the state SIPs generally adopted regulatory language modeled after the language of the federal programs for the pollutants at issue in this case. Accordingly, the regulatory requirements pertaining to emissions increases are generally the same and thus can be discussed generically in this part of our decision. The following is a brief identification of the power plant units, pollutants emitted by those units, and citations to the applicable regulations that will be discussed in this Part III.D.

As directed by the Board in its May 15 Order, the parties have entered into a comprehensive stipulation regarding both the attainment or nonattainment status of the areas of TVA's plants and the applicable state

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[61] The NSPS regulatory requirements for the emissions increase test will be discussed below in Part III. E as well.

SIP provisions and federal regulations. *See* Regulation Stipulation. The parties have also attached copies of the applicable SIP provisions and federal regulations to the Regulation Stipulation, set forth in numbered tabs from 1 to 23. The units and the regulations that applied to them during the relevant time frames are as follows:

a. *Federal PSD Units.* Paradise Units 1, 2, and 3 were in an area classified as attainment for NO_2. Regulation Stipulation ¶ 3, at 6. During the relevant time, Kentucky did not have an approved SIP governing PSD permitting. *Id.* at 3, ¶¶ 4-5. Accordingly, the question as to whether TVA was required to obtain a preconstruction permit for NO_X for the physical changes to Paradise Units 1, 2 and 3 is governed by the federal PSD regulations.

b. *Kentucky PSD Units.* Shawnee Unit 1 and 4 were in an area classified as attainment for NO_2 and SO_2. *Id.* ¶ 4, at 6. At the relevant time,[62] Kentucky had an approved SIP for PSD. *Id.* ¶ 5, at 3-4. Accordingly, the question of whether TVA was required to obtain a preconstruction permit for these pollutants at these units is governed by the applicable Kentucky SIP provisions on PSD identified in the Regulation Stipulation ¶ 5, at 3- 4.

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[62] Construction of the physical changes to Shawnee Unit 1 was commenced on October 31, 1989. EPA Enforcement Ex. 134. The Kentucky SIP provisions governing PSD permitting became effective on October 2, 1989. Regulation Stipulation at 3 ¶ 5.

c. *Tennessee PSD Regulations (Pre-1994).* John Sevier Unit 3, Kingston Unit 6, Kingston Unit 8, and Bull Run Unit 1 were in a location classified during the relevant time as attainment for NO_2, SO_2, and TSP/PM_{10}. Regulation Stipulation ¶ 2, at 6. Tennessee had an approved SIP governing PSD permitting. *Id.* ¶ 2, at 2. Accordingly, the question as to whether TVA was required to obtain a preconstruction permit for these pollutants at these units is governed by the applicable Tennessee SIP provisions on PSD identified in the Regulation Stipulation ¶ 2., at 2.

d. *Tennessee PSD Regulations (Post-1994).* Cumberland Units 1 and 2 were in an area classified as attainment for NO_2, SO_2, and TSP/PM_{10}. *Id.* ¶ 2, at 6. Tennessee had an approved SIP governing PSD permitting during this time. *Id.* ¶ 3,at 3. Accordingly, the question as to whether TVA was required to obtain a preconstruction permit for these pollutants at these units is governed by the applicable Tennessee SIP provisions on PSD identified in the Regulation Stipulation at 3 ¶ 3.

e. *Tennessee SIP, Memphis-Shelby County.* Allen Unit 3 was located in an area classified as attainment for NO_2, SO_2, and PM_{10} during the relevant time. *Id.* ¶ 1, at 5-6. The Allen plant is within the jurisdiction of the Memphis/Shelby County portion of the Tennessee SIP. *Id.* ¶ 1, at 2. Accordingly, the

question as to whether TVA was required to obtain a preconstruction permit for these pollutants at this unit is governed by the applicable Tennessee SIP provisions on PSD identified in the Regulation Stipulation ¶ 1, at 2.

f. *Alabama PSD Regulations (Pre-1987).* Colbert Unit 5 was located in an area classified as attainment for NO_2 and TSP/PM_{10}.[63] *Id.* ¶ 5, at 6. At this time, Alabama had an approved SIP for PSD. *Id.* ¶ 6, at 4. Accordingly, the question as to whether TVA was required to obtain a preconstruction permit for these pollutants at this unit is governed by the applicable Alabama SIP provisions on PSD identified in the Regulation Stipulation ¶ 6, at 4.[64]

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[63] As noted earlier, the alleged violation with respect to SO_2 emissions of the nonattainment NSR permitting requirements for Colbert Unit 5 will be discussed below in Part III.E.

[64] TVA argues that Colbert Unit 5 is exempt from the permitting requirements for NO_X and TSP under the PSD requirements of the state SIP on the grounds that construction of the physical changes was commenced within 18 months of August 7, 1980, and TVA had all of the federal, state and local preconstruction permits necessary under the SIP before that date. TVA Post-Hearing Brief at 56-60. This contention must fail. The exception upon which TVA relies is only applicable if TVA had all required preconstruction permits. ADEM Reg. 16.4.8(d)(5)(i)(ii) (Regulation Stipulation tab 14). As we conclude below in Part III.E, TVA was required to obtain a preconstruction nonattainment NSR permit for SO_2 emissions, which TVA failed to obtain. Accordingly, TVA did not have all required preconstruction permits as of August 7, 1980, or as of any other time. Moreover, TVA has not shown by record evidence that "on-site construction"

g. *Alabama PSD Regulations (Post-1987).* Widows Creek Unit 5 was in an area classified as attainment for NO_2 and TSP/PM_{10}. *Id.* ¶ 5, at 6. Alabama had an approved SIP for PSD permitting during the relevant time. *Id.* ¶ 7, at 5. Accordingly, the question as to whether TVA was required to obtain a preconstruction permit for these pollutants at this unit is governed by the applicable Alabama SIP provisions on PSD identified in the Regulation Stipulation ¶ 7, at 5.

Next, we begin our analysis of the parties' arguments regarding the emissions increase test applicable to the federal and state PSD and nonattainment NSR permitting programs by reviewing the applicable regulatory texts.

2. *Regulatory Emissions Increase Test: the "Actual-to-Potential" Test*

Throughout this discussion, because the state SIPs generally follow the federal NSR programs,[65] we will

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commenced within 18 months of August 7, 1980. *See, e.g.*, Memorandum from Roger Strelow, Assistant Administrator for Air and Waste Management, U.S. EPA, to U.S. EPA Regional Administrators at 1 (Dec. 18, 1975) (memorandum regarding interpretation of "Commencement of Construction"). Further, TVA has not demonstrated that the contracts to which it refers, as proof of construction commencement, were for "continuous on-site construction" commencing as of an identifiable date. *See, e.g.*, Memorandum from Roger Strelow, Assistant Administrator for Air and Waste Management, U.S. EPA, to U.S. EPA Regional Administrators at 1 (Apr. 21, 1976) (memorandum regarding interpretation of "Commencement of Construction").

[65] As noted previously, the Alabama SIP's emissions increase test for the nonattainment NSR program prior to its amendment

focus primarily on the federal PSD program requirements and identify in the citations or footnotes the parallel requirements under the state SIPs. For the federal PSD program, our discussion will be based upon the 1984 version of the Code of Federal Regulations. The parties have stipulated that the 1984 version of the Code of Federal Regulations contains the text applicable to the violations at Paradise Units 1, 2, and 3 with respect to NO_X emissions. These regulations are not directly applicable to any of the other violations, which are governed instead by the provisions of the state SIPs.

The federal PSD regulatory definition of "major modification" states that, to be included within the definition, a physical or operational change at the source must "result in a significant *net emissions increase*." 40 C.F.R. § 52.21(b)(2)(i) (emphasis added).[66] The phrase "net emissions increase" is separately defined in the regulations to require consideration of both "any increase in *actual emissions* from a particular physical change or change in method of operation" and any other "creditable" increases or decreases in actual emissions at the source within a "contemporaneous" period. *Id.* § 52.21(b)(3) (emphasis added).[67]

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in 1983 was similar to the federal NSPS emissions increase test, not the federal PSD test. These pre-1983 nonattainment NSR provisions are only applicable to SO_2 emissions at Colbert Unit 5, which will be discussed in Part III.E below along with the alleged NSPS violations at Colbert Unit 5.

[66] Regulation Stipulation tab 1, § 16-77 (S1200-3-9-.01(4)) (Tennessee, Memphis/Shelby County); *id.* tab 2 (1200-3-9-.01(4)) (Tennessee); *id.* tab 14, § 16.4.2 (Alabama); *id.* tab 15, § 16.4.2 (Alabama); *id.* tab 15, § 16.3.2 (Alabama).

[67] For state SIP provisions, see *supra* notes 25, 67.

The issues in the present case concern the first part of this definition (actual emissions from the physical change) and, thus, we need not discuss further the second part (creditable contemporaneous increases or decreases elsewhere at the source).[68]

The phrase "actual emissions" as used in the definition of "net emissions increase" is further defined in section 52.21(b)(21).[69] Generally, the definition of "actual emissions" requires calculation of the actual emissions prior to the physical or operational change, commonly known as the "baseline," which then is compared to the projected[70] emissions after the change. As explained more fully below, the regulations contemplate that the calculation of the pre-change emissions will be based upon data regarding the actual emissions during a two-year period prior to the change that is "representative" of normal operations. In contrast, with respect to the post-change emissions, EPA Enforcement has argued that, under certain circumstances, the post-change emissions are calculated based upon the changed unit's potential to emit.

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[68] TVA has argued that if it is required to submit permit applications for these projects, it should not be precluded from proposing increases or decreases elsewhere at the source. TVA Post-Hearing Brief at 108-10. These arguments will be considered below in Part III.G, where we address the Compliance Order's requests for relief.

[69] For state SIP provisions, see *supra* notes 25, 67.

[70] TVA argues that the post-change emissions should be calculated based on actual post-change operating data, rather than a projection of post-change emissions based on the information available to TVA at the time. This argument will be considered below in Part III.D.5.

During the time of the alleged violations in this case,[71] the definition of "actual emissions" stated in relevant part as follows:

> (i) Actual emissions means the actual rate of emissions of a pollutant from an emissions unit, as determined in accordance with paragraphs (b)(21)(ii)-(iv) of this section.
>
> (ii) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operations * * *.
>
> * * * *
>
> iv) For any emissions unit which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

40 C.F.R. § 52.21(b)(21)(i), (ii), (iv) (1984).[72] Under this definition, the pre-change "baseline" actual emissions are determined by the emission unit's recent operating history, as specified in subsection (ii). In this case, for the baseline calculation, the parties dispute whether the proper period is the two-year period immediately prior to the physical change or the two-year period with

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[71] The definition of "actual emissions" was amended in 1992 to, among other things, add an additional concept of "representative actual annual emissions." 57 Fed. Reg. 32,314 (1992). These amendments, however, are not directly applicable in this case as they were not incorporated by the relevant states into their SIPs at the time when TVA commenced construction of its projects.

[72] For state SIP provisions, see *supra* notes 25, 67.

the highest emissions within the five years immediately prior to the modifications. These arguments will be discussed below in Part III.D.3.

With respect to the post-change "actual emissions," EPA Enforcement contends that the Agency consistently interpreted this pre-1992 definition to require a unit affected by a physical or operational change to be subject to subsection (iv). EPA Enforcement states that since the calculation would be performed before the unit had "begun normal operations" following the change, the unit's post-change "actual emissions" are presumed to be equivalent to the unit's "potential to emit." *See* 45 Fed. Reg. 52,676, 52,677 (1980) ("[T]he source owner must quantify the amount of the proposed emission increase. This amount will generally be the potential to emit of the new or modified unit."). This method of calculating the emissions increase by comparing actual emissions prior to the change with post-change potential emissions is commonly referred to as the "actual-to-potential" test.

TVA argues, on the other hand, that we should apply the reasoning of the Seventh Circuit in the *WEPCO* case and bar the use of post-change "potential" emissions. Instead, according to TVA, we should require use of post-change "actual" emissions in calculating whether the change resulted in an emissions increase. The parties' arguments on this issue will be discussed below in Parts III.D.4 and D.5.

In addition, TVA argues that the manner in which Congress enacted the PSD program in 1977 evinces an intention to incorporate a statutory requirement that any emissions increase be determined based upon whether the change resulted in an increase in the maximum hourly rate of emissions. Because this argu-

ment is presented as an issue arising under the statute, which TVA alleges must be applied independent of the regulatorily prescribed test, we will discuss this issue first.

Before turning to the parties' arguments, one additional aspect of the regulations must be noted. As noted above, the parties' arguments focus on the phrase "net emissions increase" and the subsidiary definitions that must be considered to understand its meaning. This phrase, as it is used in the definition of "major modification," is qualified by the word "significant." 40 C.F.R. § 52.21(b)(2) (referring to a "significant net emissions increase"). The term "significant" is separately defined in section 52.21(b)(23) as generally meaning 40 tpy of NO_X, 40 tpy of SO_2, and 25 tpy of PM. Thus, for PSD and nonattainment NSR purposes generally,[73] any predicted emissions increase must exceed these amounts in order for the permitting requirements to be triggered.

3. *TVA's Argument That the Statute Requires EPA to Demonstrate an Hourly Emissions Increase*

TVA argues that when Congress amended the CAA in 1977, it intended EPA's long-standing regulatory interpretation of the statutory definition of "modification" in the NSPS context to be applied to the newly created PSD program. TVA thus contends that EPA's regulatory interpretation developed for the NSPS program was, in effect, incorporated into the statutory requirements of the PSD program. TVA devotes considerable discussion in its briefs developing this issue, and we now consider those arguments.

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[73] For state SIP provisions, see *supra* notes 25, 67.

TVA first notes that the definition of "modification" set forth in CAA § 111(a)(4) was originally enacted in 1970, and that EPA's initial regulations promulgated under this definition for the purposes of the NSPS program required measurement of emissions increases in terms of the unit's "emissions rate." TVA also observes that, in the mid-1970s, when EPA first proposed to create a PSD program by regulation (prior to the mandate for such a program in the 1977 CAA amendments), EPA also proposed that an emissions increase be measured based on the unit's "emissions rate." *See* TVA Response to Initial Brief at 57 & nn.44-45, (citing 39 Fed. Reg. 36,946 (1974); 39 Fed. Reg. 42,514 (1974)). It argues further that emissions rate means the unit's maximum hourly emissions rate. TVA Reply Brief at 32. Accordingly, TVA claims that when Congress amended the CAA in 1977 to create the statutory PSD and nonattainment NSR programs, it legislated in a context where EPA had uniformly interpreted the emissions increase requirement of the term "modification" to be measured based on the unit's maximum hourly rate of emissions.

In particular, TVA states that in 1977, when Congress amended the CAA:

> Congress incorporated into its definition of "construction" for purposes of the new NSR program the term "modification," as that term was defined under CAA § 111, and as that term had been consistently interpreted by EPA in contemporaneous interpretations announced between 1971 and 1977 under the NSPS and NSR rules. Specifically, following initial enactment, in which the NSR provisions had been made to apply *only* to newly-constructed sources, a technical amendment [later in

> 1977] was made to the NSR program provisions, in which Congress said that the term "'construction' when used in connection with any source or facility *includes the modification (as defined in section 7411(a)* of this title) of any source or facility."
>
> The legislative history of the technical amendment explains that the change was made in order to "[i]mplement[] [the] conference agreement to cover 'modification' as well as 'construction' by defining 'construction' in part C to conform to *usage in other parts of the Act*."

Id. at 58 (citations and footnote omitted) (quoting CAA § 169(2)(C), 42 U.S.C. § 7479(2)(C) (emphasis added by TVA); 123 Cong. Rec. H11957 (daily ed. Nov. 1, 1977) (emphasis and alterations added by TVA)). Based upon this background, TVA concludes, "[I]t is clear that Congress intended that only a NSPS modification at an existing unit is 'construction' activity that can subject an existing unit to potential NSR permitting as a result of a 'physical or operational' change." *Id.* at 60.[74]

In essence, TVA argues that the statutory definition for the PSD program of "construction," CAA § 169(2)(C), 42 U.S.C. § 7479(2)(C), which references "modification" as defined in CAA section 111, contains within it a requirement that there must be an increase in the maximum hourly emissions rate of the unit. Carried to its logical conclusion, this argument suggests that any NSR regulation promulgated by EPA which ignored this maximum hourly emissions rate would be incompatible with the statute. As explained below, we reject this argument as nothing other than an untimely

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[74] TVA reasserts this same argument in its post-hearing briefs. *See* TVA Post- Hearing Brief at 29, 31-33.

challenge to EPA's 1980 PSD regulations, which plainly established an emissions test based upon the unit's actual emissions (expressed as an average rate measured in tons per year) during the period prior to the physical or operational change and without reference to whether there was also an increase in the maximum hourly emissions rate.

As noted above, the federal regulations provide that a permit is required if the physical change results in a "significant net emissions increase." 40 C.F.R. § 52.21(b)(2)(i).[75] "Net emissions increase" in turn is defined as an increase in "actual emissions," *id.* § 52.21(b)(3), and that term is defined as "equal to the *average rate, in tons per year*, at which the unit actually emitted pollutants during a two-year period which precedes" the physical change. *Id.* § 52.21(b)(21)(ii) (emphasis added).[76] Briefly stated, the PSD regulations require consideration of the actual amount, measured in tons per year and expressed as an average annual rate, of pollution emitted by the source prior to the change and to be emitted after the change, whereas the NSPS maximum hourly emissions rate test looks to the maximum rate at which the source can emit on an hourly basis. These differences and the shift in focus from potential hourly emission rate to actual emissions, in tons per year, was thoroughly explained in the preamble to the rulemaking by which the PSD test was promulgated. *See* 45 Fed. Reg. 52,676, 52,700 (1980).

By arguing that the NSPS hourly emissions rate test must be applied as an initial step in the PSD or nonattainment NSR permitting context, TVA in effect

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[75] For state SIP provisions, see *supra* notes 25, 67.

[76] For state SIP provisions, see *supra* notes 25, 67.

challenges the emissions test required by the Agency's duly promulgated regulations. However, we have frequently stated that we will not generally entertain challenges to the Agency's regulations in the context of an enforcement or permit proceeding. *See In re B.J. Carney Indus.*, 7 E.A.D. 171, (EAB 1997) (enforcement proceeding), 192 F.3d 917 (9th Cir. 1999), *vacated as moot*, 200 F.3d 1222 (9th Cir. 2000); *In re Echevarria*, 5 E.A.D. 626, 634 (EAB 1994) (enforcement proceeding); *In re Puna Geothermal Venture*, UIC Appeal Nos. 99-2 to -5, slip op. at 9 n.7 (EAB, June 27, 2000), 9 E.A.D. ___ (challenges to regulations not entertained in a permitting proceeding); *In re City of Port St. Joe*, 7 E.A.D. 275, (EAB 1997) (same); *In re Suckla Farms, Inc.*, 4 E.A.D. 686, 698 (EAB 1993) (same); *In re Ford Motor Co.*, 3 E.A.D. 677, 682 n.2 (Adm'r 1991) (same). We see no compelling reason to depart from this principle here. Accordingly, TVA's arguments are rejected as untimely challenges to the Agency's PSD regulations (and the EPA-approved SIPs).

We also reject TVA's argument because a plain reading of the statutory text makes clear that the CAA is not limited in the manner argued by TVA. Indeed, there is no suggestion in the language of the statute itself that an emissions increase must be measured as "maximum hourly emissions rate." The statutory text merely refers to "*increase*[] [in] the *amount* of any air pollutant emitted." CAA § 111(a)(4), 42 U.S.C. § 7411(a)(4) (emphasis added). It does not specify how an increase is to be measured (whether by maximum hourly rate as suggested by TVA or by tons per year as stated in the PSD and nonattainment NSR regulations or by any other method), or even use the words "hourly" or "emission rate." *Cf.* 40 C.F.R.

§ 52.21(b)(21)(ii). Had Congress intended to restrict the Agency's discretion in this respect, it surely would have stated this limitation expressly in language far more limiting than the provision it chose to enact into law.[77]

TVA has cited no case, Agency interpretation, or other authority published in the nearly twenty-five years since the enactment of the 1977 CAA amendments for its novel argument that the statutory definition must be interpreted for both the NSR and NSPS programs to require measurement of emissions as a "maximum hourly emissions rate." To the contrary, there are numerous instances in which EPA and the courts have stated that the emissions increase test is different for the two programs. *See, e.g., WEPCO,* 893 F.2d at 905, 913;[78] *Puerto Rican Cement Co. v. EPA*, 889 F.2d 292, 298 (1st Cir. 1989); Letter to Timothy J. Method, Assistant Commissioner, Indiana

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[77] EPA Enforcement has suggested that, under the statutory definition, emissions could be measured by any of the following: "the unit's actual emissions, its maximum theoretical potential to emit, its present (that is, considering deterioration) potential to emit, its permitted allowable emissions, or any other measure." EPA Enforcement Post-Hearing Brief at 133.

[78] In discussing the statutory emissions increase requirement, the Seventh Circuit stated that arguments regarding "emission rates" arise under the regulations, not under the statute itself. *WEPCO*, 893 F.2d at 910. The court then held as follows: "For purposes of the statutory requirement, we simply observe that the rejuvenated Port Washington plant will *produce more emissions* after the completion of the renovation project than the operating deteriorated plant produced shortly before the project was undertaken." *Id.* (emphasis added). In so holding, the court noted that WEPCO had admitted that the "replacement program" would enable its "deteriorated generators to operate at full capacity," which would cause emissions to "increase from their current operating levels." *Id.*

Department of Environmental Management, from David Kee, EPA Director of Air and Radiation Division at 2-4 (Jan. 30, 1990); *see also Alabama Power*, 636 F.2d 323, 397-98 (D.C. Cir. 1980) (holding that, even though the same statutory definition of the term "source" in CAA § 111 applies to the NSPS program and the PSD programs, EPA may define the "component terms" used within section 111's definition differently because of differences in the purposes and structure of the two programs).

Moreover, we see nothing in the statutory text, legislative history, or the circumstances of the 1977 amendments cited by TVA that would compel us to interpret the statutory definition more narrowly than the court applied in *WEPCO*. In that case, the court specifically observed that "each program [NSPS and PSD] measures emissions in a fundamentally distinct manner." *WEPCO*, 893 F.2d at 913. We certainly see no requirement that measurement of an emissions increase may only be based on "maximum hourly emissions rate."

EPA has chosen, through its regulations, to advance the technology centered purposes of the NSPS for steam generating boilers by measuring emissions increase based on maximum hourly emissions rate, and to advance the locality centered purposes of the PSD and nonattainment NSR programs by measuring emissions based on tons per year. *Compare* 40 C.F.R. § 60.14, *with* 40 C.F.R. §§ 51.24(b)(4), 52.21(b)(4); *see also Northern Plains Resource Council v. EPA*, 645 F.2d 1349, 1356 (9th Cir. 1981)).[79] As noted above, the propriety of

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[79] TVA argues that EPA acknowledged the existence of an hourly emissions rate requirement by excluding "an increase in the

that regulatory choice, made more than twenty years ago, may not be reviewed in this case and, in particular, we see no reason to interpret the statutory definition of "modification" as compelling the use of "maximum hourly emissions rate" as a predicate to both programs.

Thus, we reject TVA's argument that Congress' cross-reference in the PSD portion of the CAA to the definition of "modification" in the NSPS portion of the statute ensconced the NSPS regulatory emissions increase test as a fixed and immutable emissions test applicable to the PSD or other NSR programs. Next, we turn to the parties' arguments arising under the terms of the regulations themselves, beginning with the

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hours of operation or in the production rate" from "physical change or change in the method of operation." *See* 40 C.F.R. § 52.21(b)(iii)(f). This argument, however, has no merit — it is not only incompatible with a plain reading of the "hours of operation" exception, but it also has been rejected by the EPA and by two federal circuit courts. In particular, the Seventh Circuit stated as follows:

> Despite WEPCO's protestations, we note initially that the EPA's refusal to apply the "production rate/hours of operation" exclusion was proper. This exclusion—which states that "[a] physical change or change in the method of operation shall not include * * * [a]n increase in the hours of operation or in the production rate,"—was provided to allow facilities to take advantage of fluctuating market conditions, not construction or modification activity.

WEPCO, 893 F.2d at 916 n.11 (quoting 40 C.F.R. § 52.21(b)(iii)(f)) (modifications made by the court) (citations omitted); *see also Puerto Rican Cement Co. v. EPA*, 889 F.2d 292, 298 (1st Cir. 1989). In sum, the Agency for many years has interpreted the hours of operation/production rate exception as applicable to operational changes where there is no other change such as the physical changes made by TVA at issue in this case.

arguments regarding calculation of the pre-change "baseline" emissions.

4. *Base-line Emissions Issues*

As noted earlier, the regulatory definition of "actual emissions" which is used in the definition of "net emissions increase" contemplates the comparison of the *average emissions, in tons per year,* during a pre-change "baseline" period to the emissions after the change. In this part of our discussion, we will consider the parties' arguments regarding the proper method for calculating the emissions in the baseline period. For ease of reference, the applicable regulatory text is as follows:

> In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operations * * *.

40 C.F.R. § 52.21(b)(21)(ii).[80]

EPA Enforcement argues that the baseline emissions must be based upon the two-year period that immediately precedes the particular physical change. EPA Enforcement Post-Hearing Brief at 117-21. EPA Enforcement contends that the regulation quoted above establishes a presumption that the two-year period immediately before the physical change is representative of normal operations. *Id.* at 117-18. It argues that this presumption is explained in an Agency guidance document. *See id.* at 118 (citing *New Source*

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[80] For state SIP provisions, see *supra* notes 25, 67.

Review Workshop Manual at A.39 (draft Oct. 1990));[81] EPA Enforcement Reply Brief at 26. EPA Enforcement concludes that, if TVA believes that the immediately preceding two-year period is not representative, "TVA must persuade the Board that any alternative period is more representative of unit emissions." EPA Enforcement Post-Hearing Brief at 117.

Although the parties extensively argue whether a rebuttable presumption exists in favor of one baseline period over another, we conclude that any such rebuttable presumption would have no effect on our ruling here, as TVA's evidence is sufficient to overcome any such presumption.

EPA Enforcement's witness, Mr. Van Gieson, testified, based on a review of certain data regarding these

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[81] The New Source Review Workshop Manual was issued as a guidance document for use in conjunction with new source review workshops and training, and to guide permitting officials with respect to PSD requirements and policy. Although it is not accorded the same weight as a binding Agency regulation, the Manual has been looked to by this Board as a statement of the Agency's thinking on certain PSD issues. *See, e.g., In re Steel Dynamics, Inc.*, PSD Appeal Nos. 99-4 & 99-5, slip op. at 12 n.8 (EAB, June 22, 2000), 9 E.A.D. ___; *In re Hawaii Elec. Light Co.*, PSD Appeal Nos. 98-22 to -24, slip op. at 9 n.7 (EAB, Nov. 25, 1998), 8 E.A.D. __; *In re Masonite Corp.*, 5 E.A.D. 551, 558 n.8 (EAB 1994). As noted by EPA Enforcement, the New Source Review Workshop Manual provides guidance that the two years immediately prior to the change is presumed to be the representative period. In contrast, the preamble to the 1992 amendments to the NSR regulations suggests that any two-year period within the previous five years may be representative. 57 Fed. Reg. 32,314 (1992). We need not decide which of these two presumptions controls at the time of the various projects at issue in this case, as TVA's evidence is sufficient to overcome any such presumption, as discussed in the text.

units, including the monthly operating statistics reports, that "there is nothing to suggest that the two year time period before the [project] did not represent normal source operations." EPA Enforcement Ex. 277, at 31 (Van Gieson pre-filed testimony). As EPA Enforcement argued in its briefs, given the steady deterioration of the units involved, and the associated progressive decline in unit performance, it was reasonable, absent other information, to look at the period immediately prior to the change as indicative of the unit's operational capacity at the time of the change. EPA Enforcement Reply Brief at 26. Thus, although Mr. Van Gieson's testimony does not eliminate the possibility that another time period might be more representative, it provides some evidence that the two-year period immediately preceding the physical changes at issue is "representative" in this case, and, even if EPA Enforcement were not entitled to the benefit of a presumption, it nevertheless produced sufficient evidence to establish a *prima facie* case regarding its proposed baseline period. In any case, TVA's evidence is sufficient to rebut this evidence and any suggested presumption.

TVA introduced evidence to establish that, at least for some of the units,[82] another two-year period was more representative of normal source operations. TVA's witness, Mr. Houston, testified that "the 24-month period having the highest annual emissions rate during the five years preceding the project [is] the

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[82] For several of the units, TVA's evidence established that the appropriate baseline period is the two-year period immediately preceding the physical changes at issue. *See* TVA Ex. 9, atts. 10 (Allen Unit 3), 12 (Cumberland Unit 1).

baseline period representative of normal operations." TVA Ex. 9 at 5 (Houston pre-filed testimony).

Mr. Houston testified that he used the "high two-of-five" period as representative of normal operations because it would take into account "any fluctuations in utilization of the unit that may be due to various factors, such as weather, availability of other units on the system, etc." *Id.* Mr. Houston further testified that it is TVA's goal to operate its coal-fired generators to achieve full capacity. *Id.* at 4; Tr. at 950. He also testified that he chose the high emissions period as the representative period because "generally the closer the operation is to normal is going to mean the emissions are going to be higher with more operations." Tr. at 950. In its post-hearing brief, TVA explains the import of Mr. Houston's testimony as follows:

> In other words, by using the high 2 of 5 period as the baseline period, which varies from unit to unit depending upon the particular conditions of the unit during the 5- year period before the change, one would avoid the likelihood that factors wholly independent from the project or the conditions of the unit before the project—such as weather and availability of other units on the system, i.e. independent demand factors—would affect the operation of the unit during the baseline period.

TVA Post-Hearing Brief at 73-74.

In its post-hearing brief, EPA Enforcement attempts to discredit Mr. Houston's testimony by noting that "Mr. Houston ignores the fact that these units were deteriorating at a steady rate, so that although TVA would have preferred to run the units at a higher capacity, normal operations of the unit did not reach

those levels." EPA Enforcement Post-Hearing Brief at 26. While EPA Enforcement's observation that these units were generally deteriorating is established by the record in this case,[83] EPA Enforcement did not introduce any evidence to establish, for example, that for those units with emissions in the two-year period immediately preceding the physical changes that were lower than the emissions in the high-two-of-five period, such lower emissions were more likely the result of deterioration as opposed to other factors such as weather conditions.

TVA has fairly put in question whether the reduced emissions in the two years before the project were not caused by general deterioration, but rather were due to other factors including weather. In sum, TVA introduced evidence explaining why a period other than the first two years prior to the physical changes would be more representative of normal operations and EPA Enforcement has not sufficiently rebutted that evidence, having only introduced testimony that Mr. Van Gieson concluded, based on a review of certain data, that there was "nothing to suggest that the two year time period before the [project] did not represent normal source operations." EPA Enforcement Ex. 277 at 31 (Van Gieson pre-filed testimony).

Given EPA Enforcement's inability to adduce evidence sufficient to overcome TVA's rebuttal evidence, we conclude, based on the evidence in the record of this case, that the two-year period having the highest emissions in the five-year period preceding the change is the most representative of normal source operations and shall be used as the baseline period for calculation

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[83] *See* App. A.

of the pre-change emissions of the fourteen units at issue in this case. Although we rely on Mr. Houston's testimony in concluding that this period is most representative in this case, in our following discussion we will generally refer to Mr. Van Gieson's testimony and emission calculations as his testimony includes coverage of the emissions in this period and provides a clearer comparative framework. Mr. Houston did not provide testimony as to the post-change emissions calculation that, as discussed below, we find appropriate. Although there are some differences between the twenty- four month periods that Mr. Van Gieson and Mr. Houston concluded were the high-two-of-five for specific projects, such differences are not material. In addition, we note that both Mr. Van Gieson and Mr. Houston determined that the high-two-of-five period for some of the projects was, in fact, the two-year period immediately preceding the physical change.

Next, we turn to the issues regarding calculation of emissions attributable to the post-change period.

5. *Issues Regarding Post-Change Emissions: WEPCO Decision and Other Issues*

As noted above, the Agency historically has interpreted the definition of "actual emissions" as requiring post-change emissions for a unit that has been subject to a physical or operational change to be measured as the unit's potential to emit. In particular, the Agency has generally interpreted changed units as subject to subpart (iv) of the definition of "actual emissions." For ease of reference, that subpart states as follows:

> (iv) For any emissions unit which has not begun normal operations on the particular date, actual

> emissions shall equal the potential to emit of the unit on that date.

40 C.F.R. § 52.21(b)(21)(iv) (1989).[84] This subpart has been viewed as applicable to changed units under the notion that, when the preconstruction prediction of emissions is made, the unit to be affected by the change has not "begun normal operations" as a changed unit. As noted earlier in this decision, the method of calculating emissions increase based on these regulations as advocated by EPA Enforcement is referred to as the "actual-to-potential" test.

TVA argues in the present case that the actual-to-potential test for calculating whether an emissions increase will result from a physical change should not be applied to the changes made to the fourteen units at issue here. TVA first argues that, in *WEPCO*, the Seventh Circuit rejected application of the actual-to-potential test for replacement projects allegedly similar to those at issue in this case. *See* TVA Post-Hearing Brief at 63-66; *WEPCO*, 893 F.2d 901 (7th Cir. 1990). Second, TVA argues that it is inappropriate in a case, such as this one, arising years after the physical changes were completed, for the post-change emissions to be calculated based on a hypothetical projection of emissions (which we will refer to as a "retrospective prediction" method), when the post-change emissions can be calculated based on evidence of the post-change operations (we will refer to such a test based on operating data as a "actual-to-confirmed-actual" test). TVA Post-Hearing Brief at 66-71. These issues are discussed below.

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[84] For state SIP provisions, see *supra* notes 25 & 67.

a. *The Actual-to-Potential Test: WEPCO and the Region's Allegations in the Compliance Order*

As noted, TVA argues that we should adopt the analysis used by the Seventh Circuit in *WEPCO*, 893 F.2d 901 (7th Cir. 1990), and reject EPA Enforcement's analysis based on the actual-to-potential test. In the *WEPCO* case, the Seventh Circuit did not uphold the Agency's application of the actual-to-potential test to what the court referred to as proposed "like-kind replacements" at a facility that had an extensive history of prior operations. Instead, noting that it had concerns regarding the "assumption of continuous operations" for a unit that had a prior operating history, the Court stated that "the EPA's reliance on an assumed continuous operation as a basis for finding an emissions increase is not properly supported." *Id.* at 918.

The projects at issue in WEPCO involved substantial renovations of five 80-MW coal-fired generating units at WEPCO's Port Washington electric power plant. All five of the units had experienced significant age-related deterioration that prevented them from being operated at their original capacity. *Id.* at 905-06. Indeed, one of the units, Unit 5, had been shut down completely due to the possibility of catastrophic failure if it were operated. *Id.* WEPCO's proposed renovation project would have enabled all five units "capable of generating at [their] designed capability until year 2010." *Id.* at 906.

When the court turned to its review of the Agency's determination that the proposed renovation projects would result in a "significant net emissions increase" under the PSD regulations, the court noted that "[i]n calculating the plant's post-renovation potential to emit, the EPA bases its figures on round-the-clock operations

(24 hours per day, 365 days per year) because WEPCO could potentially operate its facility continuously, despite the fact that WEPCO has never done so in the past." *Id.* at 916. With this background, the court noted that it was "troubled by the EPA's assumption of continuous operations." It also stated, however, that "EPA cannot reasonably rely on a utilities' own unenforceable estimates of its annual emissions." *Id.* at 917. Nevertheless, it concluded that "we find no support in the regulations for the EPA's decision to wholly disregard past operating conditions at the plant." *Id.* It therefore held that "the EPA's reliance on an assumed continuous operation as a basis for finding an emissions increase is not properly supported." *Id.* at 918.

In the present case, TVA argues that use of the actual-to-potential test was "expressly repudiated by the Seventh Circuit in *WEPCO*," TVA Post-Hearing Reply Brief at 38, and that the *WEPCO* holding must be followed by the Board. *Id.* at 38 n.38. In contrast, EPA Enforcement argues that we should apply an actual-to-potential test in this case. EPA Enforcement Post-Hearing Brief at 73-90, 116-61; EPA Enforcement Initial Brief at 34-49. With respect to the Seventh Circuit's WEPCO decision, EPA Enforcement contends that (1) *WEPCO* is distinguishable from this case in that TVA intended the projects at issue in this case to restore lost generating capacity, which TVA intended to use (EPA Enforcement Post-Hearing Brief at 143-44, 152), (2) the Seventh Circuit's reasoning is faulty in several respects (*id.* at 147-48), and (3) by its 1992 rulemaking, known as the "WEPCO Rule," EPA formally determined, through notice and comment rulemaking, the circumstances in which an "electric utility steam generating unit" may use a test other than

the actual-to-potential test for determining the post-change emissions of the changed unit. *Id.* at 146-47, 150-52.

While the parties have devoted considerable time in their briefs arguing the applicability of the Seventh Circuit's analysis to this case, we conclude that it is unnecessary for us to decide these issues. In the present case, notwithstanding EPA Enforcement's advocacy of the appropriateness of an actual-to-potential test in the context of this reconsideration, we decline to apply that test because of the way that the Region, in the exercise of its enforcement discretion, framed the test in its Compliance Order. In particular, the Compliance Order, as amended on April 10, 2000, states that "[i]n determining whether a significant emissions increase has resulted from a major modification in the case of electric utilities, actual pre-modification emissions are compared with *projected actual* emissions after the modification." Compliance Order ¶ 18 (citing *WEPCO*, 893 F.2d 901 (7th Cir. 1990)) (emphasis added). This statement is part of the Region's notice to TVA of the rules and regulations that it is accused of having violated and, as such, provided TVA with notice of the Region's theory of its case. While EPA Enforcement's briefing of the actual-to-potential test can be viewed as, in effect, a request for us to disregard the Region's statement in the Compliance Order of its view of the applicable emissions test, nevertheless, we are disinclined to hold TVA to a more rigorous[85] standard

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[85] The actual-to-potential test is a more rigorous standard in this case than the other proposed methods of calculating the post-change emissions increase because EPA Enforcement's evidence uniformly established higher emissions under the actual-to-

than was alleged in the Compliance Order.[86] Accordingly, we reject EPA Enforcement's proposed use in this case[87] of the actual-to- potential method of calculating the alleged emissions increase.[88]

b. *After-the-Fact "Projection" of Emissions vs. Evidence of Post-Change Emissions*

EPA Enforcement apparently anticipated the possibility that it might be precluded from using the actual-to-potential test in that it introduced evidence of the alleged emissions increases based on what we will refer to generally as a retrospective prediction or, when discussing the particular methodology used by Mr. Van Gieson, as an actual-to- projected-actual test. *See* EPA Enforcement Exs. 175-88; EPA Enforcement Post-Hearing Brief at 153-62. EPA Enforcement's proposed projection of post-change emissions are based upon

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potential method than under the other proposed methods. *See* EPA Enforcement Exs. 175-88.

[86] Although this statement in the Compliance Order may not be a legal bar to application of a different test, we do not believe under the circumstances of this case that EPA Enforcement should on reconsideration be permitted to alter a foundational premise of the order that we are reconsidering, and change such a fundamental component of its theory of the case in a way that inures to its benefit.

[87] TVA's arguments that it did not have "fair notice" of the alleged applicability of the actual-to-potential method, *see* TVA Post-Hearing Brief at 99-107, are moot because we have rejected application of the actual-to-potential method in this case. Further, TVA has not argued that it lacked fair notice of emissions increases calculated based upon a projection of post-change emissions (nor could it, because a preconstruction permit application must, at a minimum, contain such projections).

[88] We express no view as to whether the actual-to-potential test would or would not be appropriate in other cases.

what it believes "should have been put into a NSR permit application had TVA applied for a permit" prior to making the particular physical changes at issue. EPA Enforcement Post-Hearing Brief at 156. To make its "projections," EPA Enforcement used "relevant information" that was available to TVA and shows either TVA's own "specific numeric predictions of a unit's operations after the project" or "information about component performance and loss in generating ability of the unit due to the component's failures." *Id.* at 157.

In contrast, TVA argues that it is inappropriate in a case such as this one, arising years after the physical changes were completed, to calculate post-change emissions based on a hypothetical projection of emissions, when the post-change emissions can be discerned from evidence of the post-change operations that in fact occurred. TVA Post- Hearing Brief at 66-71. (We will refer to TVA's proposed test based on post-change operating data as an "actual-to-confirmed-actual" test.) TVA articulates this argument as follows:

> EPA Enforcement's reasoning has no place in an enforcement action, where EPA Enforcement is alleging a violation of NSR requirements *after* the fact. In an enforcement action, such as this case, EPA Enforcement has actual data of pre-project as well as post-project emissions. It simply makes no sense for EPA Enforcement to "project" a unit's actual emissions after the project (based on an unrealistic set of assumptions) in calculating "[a]ny increase in *actual* emissions from a particular" physical or operational change (40 C.F.R. § 52.21(b)(3)(i)), when EPA Enforcement has actual emissions data for both the pre- project and post-project periods. *See* Tr. at 519. Certainly, projec-

> tions based upon assumptions cannot be considered best evidence.

TVA Post-Hearing Brief at 65 (emphasis added by TVA).

TVA's argument that this proceeding should look to historical post-change operating data, rather than hypothetical projections, must be rejected as contrary to the requirements of the CAA and applicable NSR regulations. Initially, it is worth noting that the only authority TVA cites for its argument is one part of the regulations that interprets and elaborates upon the statutory definition of "modification." TVA Post-Hearing Brief at 65 (citing 40 C.F.R. § 52.21(b)(3)(i)).[89] We conclude that these regulatory terms and phrases cannot be read in isolation, but must be interpreted and applied in light of the statutory and regulatory architecture and, in particular, in the context of the violations alleged in the Compliance Order.

First, we note that the Compliance Order was issued pursuant to CAA § 113, 42 U.S.C. § 7413, which authorizes the Administrator to issue orders directing

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[89] The particular regulatory text cited by TVA was promulgated to elaborate upon the emissions increase requirement of the statutory definition of "modification." The regulatory text cited by TVA appears at 40 C.F.R. § 52.21(b)(3)(i), which is the definition of "net emissions increase." The term "actual," as used in this context, was intended to signal a departure from reliance on "potential emission rate" and has no bearing upon the choice in an enforcement context as to whether post-change emissions are to be calculated based upon either a hypothetical projection of post-change emissions or data regarding the post-change operations. *See* 45 Fed. Reg. at 52,700.

compliance with the CAA,[90] as well as CAA § 167, 42 U.S.C. § 7477, which directs the Administrator to take such measures as necessary "to prevent construction or modification" of a nonconforming facility. Because the Act specifically contemplates that an enforcement action to prevent construction may be brought before modification of a facility is complete, Congress must have intended the determination in such an enforcement action to be based upon projections of emissions increases.[91]

Moreover, the preconstruction permitting requirements also contemplate that the source owner must decide whether to apply for a permit based upon predictions of whether the emissions increase from a physical change will exceed the applicable significance levels after the change has been made. The applicable significance level for NO_X and SO_2 is 40 tpy; for PM it is 25 tpy.[92] As demonstrated below, a violation of the requirement to obtain a preconstruction permit brought after the physical change has been completed must also be determined based on the same standards as would apply in either the permitting context or the enforcement context where construction has not been completed–namely a prediction of emissions based on

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[90] More specifically, the Compliance Order alleges that TVA violated the CAA's requirement that it obtain NSR permits before beginning "construction." Compliance Order ¶¶ 57, 67, 82 (citing CAA § 165, 42 U.S.C. § 7475, 40 C.F.R. § 52.21(b)(2)).

[91] In an enforcement action brought prior to completion of construction, the con-sequences of the physical change (that is being constructed) can only be determined by predictions.

[92] *See* definition of "significant" at 40 C.F.R. § 52.21(b)(23) (1984).

the information known before the physical change is made.[93] Our analysis follows.

The statute expressly contemplates that projections of the impact of a change must be made before construction. Before a permit is issued, among other things, the owner or operator of the source must, using projections of post-change emissions, demonstrate that emissions from the modified source will not violate air quality requirements. Specifically, section 165 states that "[n]o major emitting facility * * * may be constructed unless a permit *has been issued* for such *proposed facility*." CAA § 165, 42 U.S.C. § 7475 (emphasis added). Further, the owner or operator must demonstrate that "emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of" the NAAQS, among other things. CAA § 165(a)(3), 42 U.S.C. § 7475(a)(3). A permit may not be issued unless "there has been an analysis of any air quality impacts projected for the area as a result of growth associated with such facility." CAA § 165(a)(6), 42 U.S.C. § 7475(a)(6).

Moreover, if a permit is issued containing operating or other restrictions based upon the results of these predictions, the permit restrictions cannot be removed even when the post-change operations demonstrate that the predictions were erroneous. *Hawaiian Elec. Co. v. EPA*, 723 F.2d 1440, 1446 (9th Cir. 1984)

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[93] In particular, the violation at issue (failure to obtain a preconstruction permit) is determined based in part upon whether the change (that requires a permit) results in an emissions increase. CAA § 111(a)(4), 42 U.S.C. § 7411(a)(4); 40 C.F.R. § 52.21(b)(2)(i) (1984) (major modification means any "physical change * * * that *would* result in a significant net emissions increase") (emphasis added).

("Nothing in the Clean Air Act or its legislative history indicates that Congress intended that EPA should have to reconsider each and every PSD permit if modeling predictions were subsequently drawn into question.").

This statutory and regulatory structure has two important features relevant to the present discussion: (1) the permit must be obtained *before* the physical change is made, and (2) whether a physical change requires a permit is determined in part by reference to anticipated results or consequences, which necessarily would occur *after* the physical change is made. Thus, the only way for the owner or operator of the source to know whether a permit is required for any particular physical change is for the owner or operator to make a prediction as to whether the emissions increase will occur. This observation was described by EPA in the 1992 preamble to amendments to the NSR regulations as follows:

> Applicability of the CAA's NSR provisions must be determined in advance of construction and is pollutant specific. In cases involving existing sources, this requires a pollutant-by-pollutant projection of the emissions increases, if any, that will result from the physical or operational change.

57 Fed. Reg. 32,314, 32,316 n.8 (1992).

Because the statute and regulations contemplate that the regulated entity must predict future events in order to determine whether a permit is required, we conclude that it is appropriate to base a finding of violation (for failure to obtain the permit) upon what the entity reasonably could have predicted prior to beginning "con-

struction."[94] Any other construction of the statute would turn the preconstruction permitting program on its head and would allow sources to construct without a permit while they wait to see if it would be proven that emissions would increase. Clearly Congress did not intend such an outcome, which would eviscerate the *preconstruction* dimension of the program.

Thus, we find that the question of whether the physical changes made by TVA required a preconstruction permit must be determined based upon evidence regarding projections of emissions increases that should have been performed by TVA before it made the physical changes. However, as we note in the following section (where we will consider EPA Enforcement's evidence regarding its proposed actual-to-projected-actual test and TVA's challenges to that evidence), the confirmed-actual data may be considered for the limited purpose of either confirming or refuting the *reasonableness* of a particular prediction methodology and for other purposes.

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[94] While the parties have not identified any case law relevant to this issue (which TVA describes as a question of the validity of "retrospective projection") and we are not aware of any in the preconstruction permitting context, it is nevertheless instructive that "retrospective projections" are commonly utilized for determining a party's liabilities in other contexts. *See, e.g., Coleman v. Commissioner*, 53 T.C.M. (CCH) 598 (1987) (determination of tax liability based on "retrospective prediction" of residual value in order to determine whether transaction was properly characterized as lease or sale).

c. *EPA Enforcement's Proof of Emissions Projections and TVA's "Causation" Argument (Demand Growth and Related Issues)*

EPA Enforcement relies primarily on the testimony of Mr. Van Gieson to establish that, prior to the fourteen physical changes made by TVA to nine of its coal-fired units, TVA should have determined that those changes would result in "significant net emissions increases," thereby triggering the PSD and nonattainment NSR permitting requirements. Specifically, EPA Enforcement states as follows:

> These calculations, performed by EPA's expert witness, Mr. Van Gieson, identify the future emissions from the unit that would result from the physical change being completed if a reasonable prediction of net emissions increase had been performed before the change.

EPA Enforcement Post-Hearing Brief at 156. In essence, in the part of his analysis at issue here, Mr. Van Gieson looked back retrospectively to make a prediction, based on information available to TVA prior to the projects, as to what the emissions increases would likely be. This type of calculation we will generally refer to, in our following discussion, as a "retrospective prediction" and the specific analysis performed by Mr. Van Gieson we will refer to as his actual-to-projected-actual method.

In order to predict retrospectively the emissions increase resulting from the physical changes, Mr. Van Gieson referred to two sources of information regarding unit performance: "TVA's own internal documents justifying the construction," which provided an analysis of how some of the units would operate differently after

the change, and information about component performance and loss in generating ability due to component failure reported by TVA to the North American Electric Reliability Council's ("NERC") Generating Availability Data System ("GADS"). *Id.* The GADS records contain information submitted by electric power utility owners and operators, including TVA, regarding instances in which a unit is shut down due to problems with specific parts, or components, of the boiler (called a "forced outage") or where the unit has a reduced operating capacity due to such problems (called a unit "derating"). The GADS records contain information regarding which part of the boiler caused an outage or derating, the start and end time and date, the duration in hours, and the megawatt hour ("MWH") loss of the outage or derating.

For each of the fourteen units at issue in this case, Mr. Van Gieson reviewed the GADS information for the high-two-of-five baseline period[95] and identified the MWH loss attributable to outages and deratings associated with the part of the boiler being altered in the project at the unit. Mr. Van Gieson then "calculated the emissions effect that would occur after the part of the boiler was repaired or replaced and the megawatt hours lost were reduced to zero." *Id.* at 158. Mr. Van Gieson's calculations of the resulting increased emissions are set forth in EPA Enforcement's Exhibits 175-

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[95] *See supra* Part III.D.3, discussing our conclusion that the appropriate baseline period, based on the record of this case, is the two-year period with the highest emissions within the five-years immediately prior to the modifications, not the two years immediately preceding the physical changes at issue in this case. Mr. Van Gieson also reviewed the same information for the two-year period immediately preceding the physical change to each unit.

88, identified by the heading "projected Net Representative Future Actual Emissions Increase," and further identified by reference to the high-two-of-five baseline.[96] Mr. Van Gieson's conclusions as to the emissions increase for each unit and each pollutant as to which EPA Enforcement seeks a finding of violation (which we previously identified in Part III.A above)[97] are summarized as follows:

Chart No. 4

	NO_X (tpy)	SO_2 (tpy)	PM (tpy)
Allen Unit 3	113	266	
Bull Run Unit 1	760	1,608	14
Colbert Unit 5	2,697	10,739	60
Cumberland Unit 1	452		-[98]
Cumberland Unit 2	277		4
John Sevier Unit 3	35	98	
Kingston Unit 6	228	782	
Kingston Unit 8	318	737	4

[96] EPA Enforcement's Exhibits 175-88 set forth Mr. Van Gieson's emissions calculations under several different methods, including the actual-to-potential method and calculations of emissions based on post-change operating data, as well as the method discussed in the text (for both the high-two-of-five baseline and the two-year baseline immediately preceding the physical changes).

[97] As noted in Part III.A, EPA Enforcement abandoned allegations as to viola- tions with respect to some of the pollutants at certain units.

[98] Mr. Van Gieson's calculations showed a decrease in emissions for this pollutant at this unit.

	NO_X (tpy)	SO_2 (tpy)	PM (tpy)
Paradise Unit 1	883		
Paradise Unit 2	2,359		
Paradise Unit 3	2,323		
Shawnee Unit 1	148	177	
Shawnee Unit 4	263	309	
Widows Creek Unit 5	37	51	2

EPA Enforcement Exs. 175-88. Mr. Van Gieson testified that these retrospective predictions of emissions increases "recreate emissions calculations that would have been prepared by TVA at the time of the modification with information that was available at that time." EPA Enforcement Ex. 277 at 3 (Van Gieson prefiled testimony). EPA Enforcement argues further that "TVA's own internal documents generated at the time of each physical change prove that the physical change was intended to increase operations and, consequently, would result in an emissions increase." EPA Enforcement Post-Hearing Reply Brief at 27-28.

EPA Enforcement's requests for findings of violation (*see supra* Part III.A, Chart No. 1) were initially based upon its arguments that the actual-to-potential test is the appropriate method for determining whether a permit was required for the changes. Because we have held for the reasons stated in Part III.D.5.b above that EPA Enforcement may not rely upon the actual-to-potential test in this case, EPA Enforcement's evidence does not support its requests in several respects. In particular, Mr. Van Gieson's calculations for his actual-to-projected-actual method, with the high-two-of-five

baseline, do not show that the significance level[99] (of 40 tpy for SO_2 and NO_X, and 25 tpy for PM) would be exceeded for the following units and pollutants: (1) Bull Run Unit 1 for PM; (2) Cumberland Unit 1 for PM; (3) Cumberland Unit 2 for PM; (4) John Sevier Unit 3 for NO_X; (5) Kingston Unit 8 for PM; and (6) Widows Creek Unit 5 for both NO_X and PM. Accordingly, before turning to any of TVA's objections and challenges to Mr. Van Gieson's testimony, we hold that EPA Enforcement has failed to prove that TVA was required to obtain a PSD or nonattainment NSR permit for these pollutants at these units.

TVA raises two primary arguments to discredit Mr. Van Gieson's testimony. First, TVA argues that Mr. Van Gieson's own testimony as to his calculation under another methodology based upon the post-change operating data (which shows decreased emissions in some instances) demonstrates that Mr. Van Gieson must have used erroneous assumptions in making his projections. TVA Post-Hearing Brief at 67- 68. Second, TVA argues that Mr. Van Gieson misused the data contained in the GADS records. *Id.* at 68-70; *see also* TVA Post-Hearing Reply Brief at 49-51. More specifically, TVA states that "GADS data overestimate the impact of outages and forced deratings, offer no insight into future operations of a unit as a whole, and bear no relationship to demand or causation." TVA Post-Hearing Reply Brief at 53; *see also id.* at 53-55, 57-61. These arguments must be rejected for the following reasons.

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[99] *See* definition of "significant" at 40 C.F.R. § 52.21(b)(23) (1984).

For two reasons, we reject TVA's arguments that Mr. Van Gieson's testimony regarding the post-change operating data demonstrates that he must have used erroneous assumptions. By this argument, TVA juxtaposes data regarding post-change operations—in other words, actual-to-confirmed-actual evidence[100]—which in a minority of instances showed reduced pollutant emissions in the first two-years of post-change operations,[101] with Mr. Van Gieson's retrospective predictions to argue that Mr. Van Gieson must have made a mistake. In evaluating TVA's argument, it is first important to note that Mr. Van Gieson's testimony regarding the confirmed-actual evidence only relates to the first two-year period following the changes and,

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[100] Both Mr. Van Gieson and TVA's witness, Mr. Houston, provided an analysis of the available information regarding TVA's post-change operation of the units. These analyses were not "retrospective predictions," but instead were performed similar to the calculation of emissions in the baseline period. We generally refer to this analysis as an actual-to-confirmed-actual test.

[101] Mr. Van Gieson's calculation of the confirmed-actual emissions demonstrated reduced emissions for the pollutants that remain at issue at the following units: Bull Run Unit 1 for NO_X; John Sevier Unit 3 for SO_2; Kingston Units 6 and 8 for NO_X and SO_2; Shawnee Unit 4 for NO_X and SO_2; and Widows Creek Unit 5 for SO_2. As noted in the text, EPA Enforcement introduced many documents showing that TVA undertook these projects with the intention to increase operations after the changes. The confirmed-actual evidence in the record only shows that TVA had not, within the first two years of post-change operations, increased emissions at these plants above the previous high emissions period. Such evidence is not sufficient to rebut the direct evidence of TVA's intention to increase operations, from which TVA reasonably could have predicted emissions increases. However, as discussed below, we hold that the totality of EPA Enforcement's proof as to a predicted emissions increase at one of these units, Widows Creek Unit 5, for SO_2 is not sufficient.

therefore, cannot be looked to as definitive proof that the project did not result in an emissions increase. To the contrary, because we are looking at changes from a baseline of the two-year period with the highest emissions within the previous five years, the fact that an occasional decline in emissions was observed in the confirmed-actual evidence is not remarkable. What is remarkable is the large number of units for which emissions actually increased in the first two-year period immediately following the performance of the change when compared to the previous high pre- change emission period. One would expect that, if the projects did not result in emissions increases, emissions after the physical changes would not generally increase above the amount of emissions during what has been determined to be the previous high pre-change emissions period.

In particular, contrary to TVA's suggestion, Mr. Van Gieson's calculations based upon the first two-year's confirmed-actual data actually confirmed that the following units increased emissions for the following pollutants.[102]

Chart No. 5

	NO_X (tpy)	**SO_2 (tpy)**	**PM (tpy)**
Allen Unit 3	1,732	2,391	
Bull Run Unit 1		4,546	
Colbert Unit 5	1,774	7,467	30
Cumberland Unit 1	21,187		

[102] Increases for pollutants for which EPA Enforcement has not requested a finding of violation are omitted.

Cumberland Unit 2	4,192		
John Sevier Unit 3	298		
Paradise Unit 1	1,007		
Paradise Unit 2	421		
Paradise Unit 3	10,674		
Shawnee Unit 1	720	673	

EPA Enforcement Exs. 175-88. Thus, Mr. Van Gieson's review of the confirmed-actual data confirms that significant emission increases in fact occurred in many instances in the first two-years of post-change operations. Indeed, the confirmed-actual evidence shows that there was a significant NO_X emissions increase at John Sevier Unit 3, where Mr. Van Gieson's retrospective predictions did not show that the applicable significance level of 40 tpy would be exceeded.[103]

Second, as we have held above in Part III.D.5.b, violations of the PSD and nonattainment NSR preconstruction permitting requirements should be based upon evidence as to predictions that a source owner reasonably could have made prior to undertaking the particular physical change. This conclusion, as noted, is based upon the statutory and regulatory requirement that NSR permits be obtained before the effects of the project can be known and, therefore, calculation of an emissions increase must be based upon projections. Such retrospective predictions should generally seek to eliminate (to the extent possible) knowledge obtained

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[103] EPA Enforcement has not argued in its briefs that, if the retrospective prediction methodology is used, we should nevertheless make a finding of violation based upon the confirmed-actual evidence in this instance.

solely from hindsight[104] in order to most accurately gauge whether a respondent should have obtained a permit prior to undertaking the particular change. Significantly, had TVA properly complied with the preconstruction permitting requirements and submitted predictions of emissions increases, TVA would not have been allowed to later challenge those predictions on the grounds that confirmed-actual data demonstrated error in the predictions. *Hawaiian Elec. Co. v. EPA*, 723 F.2d 1440, 1446 (9th Cir. 1984) ("Nothing in the Clean Air Act or its legislative history indicates that Congress intended that EPA should have to reconsider each and every PSD permit if modeling predictions were subsequently drawn into question."). TVA should not, by its failure to comply with the Act's requirements, obtain an after-the-fact data review that is not available to other permit applicants.

Thus, TVA's mere reference to a minority of instances where the confirmed-actual evidence showed a decrease in emissions, rather than an increase as predicted by Mr. Van Gieson's retrospective predictions, does not, by itself, demonstrate that the reduced emissions would have been predicted by TVA prior to making the physical changes at the unit or that Mr. Van

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[104] *See Coleman v. Commissioner, 53* T.C.M. (CCH) 598 (1987) (in order to determine whether the transaction was properly characterized as a sale, as opposed to a financing agreement, for tax purposes, the Tax Court rejected the testimony of an expert who admitted difficulty in avoiding "hindsight in making retrospective residual value predictions." Instead, the Tax Court accepted the testimony of an expert who based his retrospective prediction testimony on information available in the market at the time of the transaction, and avoided information regarding subsequent changes in the market affecting whether the purported owner actually retained a residual interest in the property.).

Gieson's prediction methodology is generally unreasonable. In this regard, it is notable that no TVA officer or employee testified (and TVA did not argue in its briefs) that TVA in fact predicted (or even could have predicted) the decreases that apparently occurred. *See, e.g.,* EPA Enforcement Exs. 12, 48, 69, 75, 81, 89, 93 (TVA documents stating that no environmental analysis would be performed).

We do not hold that confirmed-actual emissions data for the post-change period can never be used to determine whether a violation of the permitting requirements occurred. Instead, we simply hold that such evidence is not the best evidence of a violation of a requirement that, if properly complied with, required the respondent to make a reasonable prediction prior to undertaking the particular change. The confirmed-actual data may be looked to as indicating, for example, whether the prediction methodology was generally reasonable. Here, as noted above, the confirmed-actual data demonstrates that a significant number of emissions increases were, in fact, observed in the first two years of post- change operations. This observed increase generally demonstrates that Mr. Van Gieson's retrospective predictions were reasonable.

We also reject TVA's argument that Mr. Van Gieson misused the data contained in the GADS records and that this alleged misuse warrants rejection of Mr. Van Gieson's conclusions. As noted above, TVA argues that "GADS data overestimate the impact of outages and forced deratings, offer no insight into future operations of a unit as a whole, and bear no relationship to demand or causation." TVA Post-Hearing Reply Brief at 53; *see also id.* at 53-55, 57-61. More specifically, TVA contends that the GADS records show when, and to what

extent, a unit is "not available" to produce electricity, not the extent to which actual utilization of the unit is reduced as a result of the "derating." TVA Post-Hearing Brief at 69. Based on this contention, TVA suggests that, when a unit is operated before a "derating" at less than maximum capacity, it is logically possible for the unit to experience a "derating" (i.e., a reduction in maximum available capacity) that does not require TVA to curtail the use of the unit. *Id.* at 69-70 (discussing a hypothetical example presented to TVA's witness). TVA thus contends that the GADS "derating" data "is *independent* of the demand on the unit during that period" and that "[o]ne must also know, at a minimum, whether the unit was called upon to run before and after the project at a level that would have caused the forced temporary derating to have some significance for the unit's actual utilization." *Id.* TVA asserts further that:

> The starting point for any emission projection must be the expected *demand* for the unit, because it is demand that dictates at what level and for how long a unit would be operated during the relevant post-project period. * * * Mr. Van Gieson did not in any way consider actual post-project demand in his "projections," let alone estimate the level of demand that TVA would have projected based on then available information.

TVA Post-Hearing Brief at 71.

There are two principal errors in this argument. First, this argument does not support TVA's conclusion that Mr. Van Gieson's predictions must be rejected. TVA's argument only applies with respect to the "derating" data reported in GADS; TVA does not

suggest that the GADS "forced outage" data fails to reflect reduced utilization. As discussed below, "forced outages" are defined by GADS as unplanned interruptions in actual service. Accordingly, the "forced outage" data reflects an impact on actual utilization, not just on available capacity.

Second, contrary to TVA's suggestion, EPA Enforcement did in fact begin by considering TVA's actual intent to utilize the units more after the projects than it was able to use them before the projects. Specifically, Mr. Van Gieson testified that "[f]or calculations done to project the effect of the modifications on emissions of the unit, I relied on both *TVA estimates of the effect of the modification* and on information from [GADS] * * *." EPA Enforcement Ex. 277, at 4 (Van Gieson pre-filed testimony) (emphasis added). The italicized part of this quotation demonstrates that, as part of his analysis, Mr. Van Gieson referred to TVA's own pre-project statements regarding the expected effect of the projects on post-change utilization. Here, Mr. Van Gieson was referring to the cost-benefit analysis TVA made before each project was approved for Allen Unit 3, Cumberland Unit 1,[105] and Colbert Unit 5. *Id.* at 37, 41, 45. The specific TVA documents relied upon by Mr. Van Gieson are EPA Enforcement Exs. 22, 63, and 93,[106] which contain specific statements by TVA quanti-

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[105] TVA also raises additional arguments specific to Mr. Van Gieson's testimony regarding Cumberland Unit 1. TVA Post-Hearing Reply Brief at 52-53.

[106] In TVA's Post-Hearing Brief, TVA argues that Mr. Van Gieson's reliance on EPA Enforcement Ex. 93 as showing a 7 MW derating at Cumberland Unit 1 constitutes error. TVA notes that in that exhibit, which is a copy of a TVA document prepared in 1991, TVA merely predicted a future 7 MW derating. TVA argues that Mr. Van Gieson erred by assuming that the derating actually

fying the extent to which TVA anticipated increased utilization of the particular units. In addition to Mr. Van Gieson's reference in his analysis to three TVA documents, EPA Enforcement identified many other TVA documents reflecting TVA's intent to increase utilization of its units after completing the projects at issue in this case.

An example of TVA's pre-project estimates, which were relied upon by Mr. Van Gieson, is the "Project Authorization" memorandum for the changes made to Colbert Unit 5, which bears a stamp indicating approval by the TVA Board of Directors in August 1979. EPA Enforcement Ex. 22. In that document, TVA stated that "[t]he proposed work is *intended* to *restore* the unit capability, *reduce* the total outage rate approximately 33 percent," among other things. *Id.* (emphasis added). TVA noted that "[w]hen the unit *was* operated it *was* derated 100 MW * * *," and that "at least another $50 million capital cost for new capacity can be saved as a result of the *restored* 100-MW capacity." *Id.* (emphasis

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occurred. TVA states that TVA Ex. 9, att. 14 (GADS data) demonstrates that the 7 MW derating was never realized. The exhibit and attachment to which TVA refers consists of 26 computer discs containing compressed data. TVA has not identified where on those discs we may find the proof to which it refers—it is not our responsibility to search such voluminous information in the absence of some further direction by TVA. However, we conclude that Mr. Van Gieson's calculations based on a 7 MW derating are merely cumulative, as his predicted emissions increase without the increase attributable to the 7 MW derating greatly exceeds the 40 tpy significance level for NO_X. Without the 7 MW derating, Mr. Van Gieson's retrospective prediction calculation showed a 216 tpy NO_X emissions increase. EPA Enforcement Ex. 178. It bears noting that the confirmed-actual evidence showed that NO_X emissions increased by 21,187 tpy. *Id.*

added). These statements are direct evidence that, prior to the physical changes at Colbert Unit 5, TVA intended to increase use of that unit after completing the physical changes. While there is no need to corroborate such direct evidence of TVA's pre-change intention, it is nevertheless worth noting that TVA's witness, Mr. Houston, admitted that, for five years prior to the changes at Colbert Unit 5, TVA never operated that unit at higher than 400 MW per hour, and that, during every month during the year after the changes, TVA operated Colbert Unit 5 at 500 MW per hour or higher. Tr. 978-81.

Many other documents introduced into evidence by EPA Enforcement show TVA's expectation that the physical changes would "eliminate forced outages," EPA Enforcement Ex. 57 (Allen Unit 3), or "improve the availability and forced outage rate." EPA Enforcement Ex. 3 (Paradise Unit 1); *see also* EPA Enforcement Exs. 7 (Paradise Unit 2), 19 (Colbert Unit 5), 11 (Paradise Unit 3), 72 (Bull Run), 102 (Cumberland Unit 2). Other documents include references like the following:

- "excessive boiler tube failure," "improve reliability." EPA Enforcement Exs. 2 (Paradise Unit 1), 9 (Paradise Unit 3), 73 (Bull Run).
- "[t]his cracking has caused an increase in header nipple tube failures and thus a decrease in unit availability." EPA Enforcement Ex. 81 (Cumberland Unit 1).
- "Paradise Unit 1 has reached forced outage levels exceeding 20 percent. Boiler tube leaks in the furnace and cyclones have accounted for 96 percent of all forced outages." EPA Enforce-

ment Ex. 4; *see also* EPA Enforcement Exs. 10 (Paradise Unit 3), 17 (Paradise Units 1, 2, & 3).

- "Based on samples taken, the existing tubes are failing because of creep damage experienced while operating at high-temperatures. This indicates that these tubes have reached the end of their life." EPA Enforcement Ex. 46 (Widows Creek Unit 5); *see also* EPA Enforcement Ex. 48 (Widows Creek Unit 5).
- "The secondary superheater has been the number 3 contributor to forced outages at Cumberland in the past 5 years." EPA Enforcement Ex. 87 at 8914159; *see also* EPA Enforcement Ex. 88 ("has resulted" in damage causing loss of generation).
- "Stub tube wall failures on the secondary superheater outlet headers are contributing 18 _ of the boiler forced outage hours for [Cumberland] unit 2." EPA Enforcement Ex. 101 at 8914497.
- For Cumberland Units 1 and 2, "lost generation is averaging over 350,000 MW-hr per year from emergency forced outages for repair of tube leaks in the secondary superheater." EPA Enforcement Ex. 111 at 8935347.
- "Over the last four years there has been experienced an average of fourteen four-day outages to repair the tube leaks in the lower waterwall tubes." EPA Enforcement Ex. 122 (Kingston Unit 6).

These examples of TVA's own statements made in project justification documents prior to the physical changes to the units at issue in this case demonstrate that, by the physical changes, TVA expected to elimi-

nate significant forced outages and other negative effects on actual unit utilization. Thus, based on TVA's own pre-project statements, EPA Enforcement established a reasonable inference that TVA in fact held a pre-project intention to operate all of these units more after the physical changes than it was able to operate them before the changes. In short, we believe that statements such as "eliminate forced outages" indicate an intention to operate a unit more after the physical changes than was possible prior to the change.

This reasonable inference regarding TVA's pre-project intention is confirmed and substantiated by the fact that TVA did, in fact, increase utilization of a majority of the units within the first two years immediately following the physical changes. The confirmed-actual data in this case, which we have held may be looked to as generally demonstrating the reasonableness, or unreasonableness, of a prediction methodology, is also relevant in assessing the reasonableness of a retrospective prediction of emissions increase in another respect. The confirmed-actual data showing increased operations, and hence increased emissions, is relevant information regarding the source operator's state of mind or, more specifically, its intention to increase operations after making the physical changes. *See, e.g., United States v. Louisiana-Pacific Corp.*, 682 F.Supp. 1141, 1161-63 (D. Colo. 1988) (holding, for the purposes of determining whether a source violated the PSD preconstruction permitting requirements, that evidence of a source owner's knowing and routine violation of maximum operation restrictions contained in a state operating permit is grounds for disregarding the permit's restrictions when calculating the source's emissions for PSD applicability). Here,

EPA Enforcement introduced evidence that both directly and by reasonable inference shows that TVA intended to increase operations of the fourteen units after it completed the physical changes at those units. Mr. Van Gieson's testimony that TVA in fact increased operations and pollutant emissions after the physical changes at many of these units is evidence that corroborates the inference that TVA intended to increase operations and, therefore, should have predicted increased emissions.[107]

The reasonable inference regarding TVA's pre-project intention to increase use of these plants after the physical changes is further substantiated by TVA's own expert witness, who testified, in justifying a high-two-of-five baseline, regarding TVA's intent to "operate[] its boiler units to achieve a full load limit based on design flow." TVA Ex. 9, at 4 (Houston pre-filed testimony). It naturally follows from such an intent that, when the physical changes corrected pipe deterioration that had caused forced outages or prevented operation at full design capacity, TVA intended to increase utilization after the physical changes were made. Thus, we conclude that, before it made the physical changes at issue in this case, TVA intended to increase utilization of the units after the changes, and it should have thus predicted increased emissions from those changes.

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[107] We do not need to decide in this case whether post-change emissions data, standing alone, is sufficient to establish an inference regarding the source operator's pre- change state of mind. As discussed below, EPA Enforcement introduced other evidence from which a reasonable inference of such intention could be drawn. Thus, here, the post-change data merely corroborates this inference.

We need not determine whether TVA used each unit in the pre-change period to the unit's maximum available capacity. Notwithstanding any lack of absolute physical limitation on increased use of a unit prior to the changes to that unit, TVA's statements of intention, as a justification of the costs of the project, demonstrate TVA's own conclusion that the project would remove a physical constraint on the unit's utilization. Given that the projects were intended to remove these limitations, it is reasonable to conclude that emissions increases resulting from the project should have been predicted by TVA. Moreover, the evidence demonstrates that, in general, changes in annual system-wide demand did not affect the utilization of the coal-fired units. *See* TVA Ex.12, att. 7. Instead, increased utilization of the coal-fired units in the early to mid-1980s was correlated with TVA's decision to decrease use of its nuclear units; demand-related deployment of the coal-fired units remained relatively constant from 1986 through 1992 (when most of these projects were performed) because, in general, increases in demand after 1985 were accommodated by increased use of TVA's nuclear units. Tr. at 469, lines 6-7; 1059, lines 8-25; 1060, lines 105; TVA Ex. 12, att. 7. Thus, a preponderance of the evidence in the record of this case demonstrates that it was predictable that emissions would increase above the applicable significance levels as a result of the physical changes at issue, and that such increases were not attributable to changes in aggregate demand on TVA's system.

Where Mr. Van Gieson was able to identify a TVA statement that quantified the anticipated increased post-change utilization, Mr. Van Gieson used TVA's own quantification. EPA Enforcement Ex. 277 at 37, 41,

45 (Van Gieson pre-filed testimony). However, where there were only generalized statements from TVA of its intent to increase utilization, Mr. Van Gieson turned to the GADS records to quantify the increased utilization associated with the specific boiler components that were being repaired or replaced in each project. Those records include data regarding lost megawatt hours during "forced outages," which are defined by GADS as an outage caused by an event that "requires immediate removal of a unit from service" or delayed removal from service, but which is a type of outage that "can only occur while the unit is in service." TVA Ex. 11, at p. III-6 to -7 (GADS Data Reporting Instructions). Based on the nature of the GADS information, we conclude that it was reasonable for Mr. Van Gieson to turn to the GADS records as providing a means for quantifying the amount of emissions increase resulting from TVA's intended increased utilization of the units after completion of the physical changes. Mr. Van Gieson's use of this data was appropriately focused narrowly on the "lost" megawatt hours associated with the specific components that were replaced as part of the physical changes. Moreover, this approach satisfies the *WEPCO* court's concern that post-change emissions projections should take into account the prior operating history of the unit. *WEPCO*, 893 F.2d at 918. Here, the prior operating history is accounted for by the selective use of only the deratings and forced outages associated with the components being replaced.

To the extent that TVA argues that the GADS records do not show whether the unit will be operated more or less after the physical change, *see* TVA Post-Hearing Reply Brief at 53, this argument is addressed and rejected by our conclusion, based on other evi-

dence, that TVA in fact intended to increase utilization after the physical changes. To the extent that TVA is arguing that the GADS data do not necessarily show any forced utilization reduction in the pre-change period, this argument cannot stand in the face of the GADS reporting instructions applicable to "forced outages," which specifically state that such outages are an interruption in service—in other words, an interruption in actual utilization and, therefore, necessarily a pre-change reduced utilization.

Finally, to the extent that TVA argues that the GADS data may still overestimate the amount of any increased emissions, it is worth noting the extent to which Mr. Van Gieson's projections predicted that the applicable significance threshold would be exceeded. In particular, with only one exception (Widows Creek Unit 5, discussed below), the predicted exceedences were more than two times, and up to more than fifty-eight times, the applicable 40 tpy significance level for NO_X and SO_2.[108] Without further proof, we are unprepared to

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[108] This means that for all but one unit, TVA would have predicted an exceedence of the 40 tpy NO_X and SO_2 significance level if it intended to increase utilization by as little as one-half of the previous forced shutdown and deratings associated with the components being repaired or replaced. Two units, Allen Unit 3 for NO_X and John Sevier Unit 3 for SO_2, were more than twice, but less than three times the 40 tpy significance level. In addition, Shawnee Unit 1 for NO_X was more than three times, but less than four times the 40 tpy significance level. All other units and pollutants were predicted to exceed the significance level by more than four times. Indeed, in the more extreme case, TVA would have known that if it increased utilization by any more than 1/58th of the previous forced shutdowns and deratings, the significance level would be exceeded.

accept a margin of error of 100% or more in the GADS data.

Under these circumstances, where we have already found that TVA intended to increase utilization and justified these projects by reference to eliminating already existing forced outages, we conclude that EPA Enforcement has shown, by a preponderance of the evidence, that the projects at the following units would result in "significant net emissions increases" of the identified pollutants. TVA has not suggested that more accurate information was available to it from which it could have more accurately projected the amount of increased utilization that it intended. The units and pollutants for which we find that EPA Enforcement has shown a physical change that would result in a significant net emissions increase are as follows (an "X" indicates a finding of violation):

Chart No. 6

	NO_X	SO_2	PM
Allen Unit 3	X	X	
Bull Run Unit 1	X	X	
Colbert Unit 5	X	*[109]	X
Cumberland Unit 1	X		
Cumberland Unit 2	X		
John Sevier Unit 3		X	
Kingston Unit 6	X	X	

[109] As noted above, the alleged violation of the permitting requirements with respect to SO_2 at Colbert Unit 5 will be discussed below in Part III.E.

Kingston Unit 8	X	X	
Paradise Unit 1	X		
Paradise Unit 2	X		
Paradise Unit 3	X		
Shawnee Unit 1	X	X	
Shawnee Unit 4	X	X	

With respect to Widows Creek Unit 5 for SO_2, for which the projected emissions increase was 51 tpy, or only 11 tpy over the 40 tpy significance level, we hold that, on balance, the evidence is not sufficient to conclude by a preponderance of the evidence that TVA should have anticipated that an exceedence of the significance level would occur. We make this judgment by considering both Mr. Van Gieson's testimony regarding his projected emissions increase of 51 tpy, and Mr. Houston's testimony suggesting that Mr. Van Gieson's reliance on GADS derating information and the full amount of the associated MWH loss may overestimate the expected emissions increase to some degree. As discussed above, we have generally concluded that Mr. Van Gieson's predictions of emissions increases that more than double the 40 tpy significance level are sufficient to establish that TVA should have predicted an exceedence of the significance level for such pollutants. Nonetheless, because Mr. Van Gieson relied principally on the GADS data in arriving at his projection for Widows Creek Unit 5 and the record suggests that there may be some margin of error in the estimates based on GADS data, we conclude that the predicted increase for SO_2 at Widows Creek Unit 5 is not sufficient proof that TVA should have anticipated that the significance level would be exceeded. There-

fore, on the record before us, we find no violation of the PSD and nonattainment NSR permitting requirements with respect to Widows Creek Unit 5.

For the foregoing reasons, we find that EPA Enforcement has sustained its burden of proof that twenty pollutants at eight of TVA's coal-fired plants would have increased as a result of physical changes made to thirteen of the units at those plants. In addition, as discussed below in Part III.E we find that the physical changes to Colbert Unit 5 resulted in an emissions increase of SO_2 under the Alabama nonattainment NSR program in effect prior to 1983. Accordingly, we find a total of twenty-one violations of the PSD and nonattainment NSR permitting requirements.

E. *NSPS and Alabama Pre-1983 Nonattainment NSR Emissions Increase Requirements*

The Compliance Order alleges that the changes made to Paradise Unit 3 in 1984 and the changes made to Colbert Unit 5 in 1982 violated the NSPS requirements. In its post-hearing brief, EPA Enforcement states that it has decided not to pursue its claim that the changes made to Paradise Unit 3 violated the NSPS requirements. EPA Enforcement Post-Hearing Brief at 163 n.102. With respect to Colbert Unit 5, however, EPA Enforcement states:

> TVA's rehabilitation project so significantly changed the boiler so that the maximum achievable hourly emission rate increased after the project, triggering the modification provision of the NSPS and making Colbert Unit 5 an "affected unit" subject to 40 C.F.R. 60, Subpart Da.

Id. at 163. TVA objects, arguing that the work performed at Colbert Unit 5 did not make it subject to NSPS. For the following reasons, we hold that the changes made by TVA to Colbert Unit 5 were "physical changes" that increased the unit's maximum hourly emissions rate and that, therefore, Colbert Unit 5 became subject to the NSPS for electric steam generating boilers as a result of such changes.

In this part of our analysis we also discuss the allegations that the changes to Colbert Unit 5 resulted in an emissions increase under the applicable provisions of the Alabama SIP's pre-1983 nonattainment NSR permitting requirements, which were in effect at the time of the project at Colbert Unit 5.

The NSPS regulations are applicable to the owner or operator of any electric utility steam generating unit, "the construction or *modification* of which is commenced after the date of publication * * * of any standard * * * applicable to that facility." 40 C.F.R. § 60.1(a) (1982) (emphasis added). EPA has published standards applicable to electric utility steam generating units for which construction or modification is commenced after September 18, 1978. 44 Fed. Reg. 33,613 (1979) (codified at 40 C.F.R. pt. 60, subpt. Da §§ 60.40a-49a) (*see* Regulation Stipulation tab 23). These NSPS cover PM, NO_X and SO_2.

For the purposes of part 60, the term "modification" is defined as follows:

> *Modification* means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility * * *.

40 C.F.R. § 60.2 (1982). Further,

> Except as provided under paragraphs (e) and (f) of this section, any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act.

Id. § 60.14(a). Emissions rate is expressed as "kg/hr of any pollutant discharged into the atmosphere for which a standard is applicable." *Id.* § 60.14(b). Briefly stated, these provisions require that, for purposes of determining the applicability of the NSPS requirements, an emissions increase is calculated based upon the potential hourly emissions of the unit, not its actual emissions. A substantially similar test was required by the Alabama SIP provisions governing nonattainment NSR prior to their amendment in 1983. *See* Regulation Stipulation tab 16, § 16.3.2(b)(4) (referring to increases in "the potential emission rate").[110] The only difference in the pre-1983 Alabama SIP provisions is that the maximum hourly rate is used to calculate a maximum potential annual emissions rate, which must increase by 100 tons or more. *Id.*

The changes at issue in the present case made to Colbert Unit 5 were commenced in 1982, after publication of the NSPS applicable to electric utility steam generating units. Accordingly, TVA was required to comply with the NSPS for the changes at Colbert Unit 5 if those changes constituted "modifications" within the meaning of the applicable NSPS regulations.

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[110] The Alabama SIP provisions define "potential" as the "maximum capacity to emit."

The initial question is whether the changes made by TVA to Colbert Unit 5 fall within the scope of "routine, maintenance, repair, and replacement which the Administrator determines to be routine for a source category * * *," which is an exception to the NSPS regulations governing modifications. 40 C.F.R. § 60.14(e)(1) (1984). TVA argues that the project at Colbert Unit 5 falls within this exception. TVA argues that this exception is functionally identical to the exception for routine maintenance, repair and replacement under the PSD and nonattainment NSR programs. Specifically, TVA relies, as support for its claims with respect to NSPS, on the same evidence and arguments that we discussed above in Part III.C of this decision regarding the NSR programs. *See* TVA's Reply Brief at 61. In addition, TVA asserts that "[t]he differences between the NSPS and NSR routine maintenance, repair and replacement language is a distinction without a difference." *Id.*

In contrast, EPA Enforcement argues that the NSPS routine maintenance exception requires an affirmative determination by the Administrator that the activity falls within the exception. EPA Enforcement is correct. The regulatory text, on its face, states that the determination must be made by the Administrator: "routine maintenance, repair and replacement which the *Administrator* determines to be routine for a source category * * *." 40 C.F.R. § 60.14(e)(1) (1984). In addition, we note that this exception is different from the exception under the NSR regulations in that the NSPS version makes reference to "routine for the source category," whereas no similar reference appears in the NSR regulations. *Compare id. with* 40 C.F.R. § 52.21(b)(2)(ii). Because TVA has not shown that the Administrator has determined, on a source category

basis, that changes of the kind undertaken at Colbert Unit 5 are routine maintenance, repair and replacement, TVA cannot avail itself of this exception to the NSPS.[111]

Next, we turn to the question of whether the physical changes made to Colbert Unit 5 resulted in an emissions increase within the meaning of the NSPS regulations and the pre-1983 nonattainment NSR provisions of the Alabama SIP.

EPA Enforcement argues that TVA's thirteen-month extended outage at Colbert Unit 5, which began in 1982 and continued into 1983, was "intended to restore approximately 100 MW of lost capacity." EPA Enforcement Post-Hearing Brief at 165. EPA Enforcement argues that it has demonstrated, through the testimony of Mr. Van Gieson, that the maximum achievable hourly emissions rate at Colbert Unit 5 increased as a result of the physical changes made to that unit. *Id.* at 165-66. EPA Enforcement also argues that this

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[111] We note as well that the facts of this case do not suggest a basis for reaching a different conclusion under the NSPS regulations from the one we reached under the NSR programs as discussed above. In our earlier discussion in Part III.C, we concluded that the changes made to the Colbert Unit 5 do not constitute routine maintenance, repair and replacement under the NSR routine exception. There, we applied the Agency's four factor test to the project and found that the magnitude of the renovation and the length of time to plan and to implement TVA's work at Unit 5 to be significant facts that cut against considering this construction work to be "routine." Moreover, the rehabilitation of this unit was designed to fundamentally change the manner in which the unit operated. These facts, as well as others more fully discussed in Part III.C.4, in our view establish that the project was not "routine" in either of the two regulatory contexts.

change increased Colbert Unit 5's potential emissions by more than 100 tons per year. *Id.* at 77.

Mr. Van Gieson's conclusion is based upon a substantial increase in the maximum hourly generation rate reported by TVA in its monthly and annual operating reports. Specifically, Mr. Van Gieson reviewed TVA's Monthly Operating Statistics Report for the one-year period before the project and noted that TVA never operated Colbert Unit 5 during that period at an hourly generation rate of more than 387 MW.[112] TVA's witness, Mr. Houston, confirmed that, for five years prior to the project, Colbert Unit 5 was not operated at more than 404 MW per hour. Tr. at 980-83.[113] Mr. Van Gieson also noted (which was confirmed by Mr. Houston) that during the one-year period immediately after the project, TVA operated Colbert Unit 5 to achieve a 509-MW maximum hourly net generation rate. *See* Tr. at 983-84.[114] Mr. Van Gieson also used other data reported by TVA in its Monthly Operating Statistics Reports to determine an emissions factor measured in units of emissions per megawatt hour of net generation. EPA Enforcement Ex. 277, at 42-43; EPA Enforcement Ex. 174. By combining this emissions factor with the maximum hourly net

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[112] TVA's monthly operating reports record the maximum hourly net generation during the reporting month.

[113] Mr. Houston's testimony showed that Colbert Unit 5 achieved a maximum hourly net generation rate in October 1977 to September 1978 of 404 MW, for the same period in 1978-79 of 399 MW, in 1979-80 of 397 MW, in 1980-81 of 389 MW, and in 1981-82 of 364 MW.

[114] Mr. Houston's testimony showed that Colbert Unit 5 achieved a maximum hourly net generation rate in October 1982 to September 1983 of 509 MW, and in the same period of 1983-84 of 495 MW. Tr. at 983-84.

generation rates for the pre-change and post- change periods, Mr. Van Gieson determined that the physical changes made to Colbert Unit 5 resulted in an increase in the unit's maximum hourly emissions rate for NO_X, SO_2 and PM. EPA Enforcement Ex. 277, at 43. The emissions rate increase calculated by Mr. Van Gieson was an increase for each pollutant of approximately 25% as a result of the physical changes made to Colbert Unit 5.

TVA argues that Mr. Van Gieson's calculation of the emissions rate increase at Colbert Unit 5 is erroneous or inadequate for two reasons, both related to Mr. Van Gieson's reliance on the "maximum hourly net generation" of the unit. First, TVA argues that the information used by Mr. Van Gieson was the maximum hourly generation rate "actually achieved," rather than the "maximum achievable" rate. TVA Post-Hearing Brief at 49. TVA argues that it presented evidence that the "nominal" derating of the unit to 400 MW prior to the project did not reflect a physical limitation on the maximum generation rate, "but rather reflected, at least in part, an administrative decision by TVA to operate Colbert Unit 5 at a lower generation rate than the unit was capable of in order to improve the long-term reliability of the unit." *Id.* at 50. TVA cites the NSPS analysis in the *WEPCO* case as an example demonstrating that actual achieved rates may be lower than maximum achievable rates. *Id.* Second, TVA argues that "EPA Enforcement ignored in its calculations the fact that *emission* rates are not always directly proportional to the *electric generation* rates that a unit produces." *Id.* (emphasis by TVA). TVA argues that it presented evidence that "the efficiency of the turbine [at Colbert Unit 5] was significantly lower

before the project than it was after the project." *Id.* TVA argues that because efficiency was improved, it is not possible to reasonably conclude that the increased actual generation rate after the project translates to an increased emissions rate. *Id.* at 50-51. Both of these arguments must be rejected for the following reasons.

First, we reject TVA's argument that an alleged improvement in turbine efficiency may explain the increased electrical generation. TVA did not provide any evidence that turbine efficiency problems were fully responsible for the reduced generation during the five-year period prior to the project. To the contrary, TVA's witness only stated that "[t]hese problems may or may not account for the full electrical capability reduction of the unit." TVA Ex. 9, at 14 (Houston pre-filed testimony). This inconclusive statement is not sufficient to rebut other evidence in the record showing that the derating prior to the change was caused, at least in part, by problems with the boiler and which were unrelated to the turbine. Specifically, the GADS data listed problems with the boiler steam chest, not any aspect of the turbine, as the reason for the derating in the period of July 1980 through February 1982. *Id.* at 13.

Second, we also reject TVA's argument that we should not look to the actual achieved rate of electrical generation as showing the maximum achievable rate in this case. The *WEPCO* case cited by TVA is instructive on this issue. In that case, WEPCO had five units that it was proposing to renovate, and EPA initially looked to the pre-project actual achieved generation rate and the projected post-project restored generation rate (similar to the evidence submitted by EPA Enforcement in the present case) to conclude that the

maximum hourly emissions rate would increase as a result of the project. *WEPCO*, 893 F.2d at 913. Before WEPCO sought judicial review of this determination, WEPCO requested reconsideration by the EPA on essentially the same grounds raised by TVA in this case, that the achieved rate only reflects an administrative decision and did not reflect the achievable emission rate. *Id.* On reconsideration, EPA allowed WEPCO to conduct five ten-hour tests at each unit to determine the units' maximum capacity, as a means of supplementing the information regarding actual operating history. *Id.* Based on those tests, EPA agreed that two of the units could be operated at their design capacity. However, it concluded that three of the units could not be operated at design capacity and, therefore, the restoration project would increase their achievable capacity by restoring them to their original design capacity. *Id.* at 914-16 & n.9.

WEPCO then objected to this supplemental determination and requested review by the Seventh Circuit. In seeking review, WEPCO raised two arguments, the first of which was that the pre-project historical operating data "reflect voluntary decisions by WEPCO regarding safety considerations * * * and an electricity demand which did not require operation of the units at higher capacities." *Id.* at 914. The Seventh Circuit rejected this argument, saying, "WEPCO's first assertion is easily dismissed. The EPA's choice of the 1987 figures was based entirely upon WEPCO's own data" and the subsequent tests resulted in a revision for only two units. *Id.* This discussion and the Seventh Circuit's conclusions demonstrate an important principle that we apply to the present case: operating data showing the achieved maximum generation rate may be

relied upon as evidence of the maximum achievable rate in the absence of tests demonstrating a higher achievable rate. It is also worth noting that later in the decision, the Seventh Circuit stated that "EPA cannot reasonably rely on a utility's own unenforceable estimates of its annual emissions." *Id.* at 917.

In the present case, the admitted fact that TVA never operated Colbert Unit 5 at an hourly rate greater than 404 MW during the entire five-year period prior to the project is compelling evidence that Colbert Unit 5 could not achieve an hourly generation rate comparable to the hourly rate of 509 MW achieved in the year immediately after the project. This evidence is further supported by the GADS data showing a continuous derating from December 5, 1975 to February 1982 of 78-120 MW. TVA Ex. 9, at 13 (Houston pre-filed testimony). TVA has not rebutted this evidence with actual test data demonstrating that Colbert Unit 5 could achieve a higher rate prior to the project. TVA has only offered testimony by Mr. Houston regarding his interviews with maintenance personnel in mid-2000 as to their recollection of the capability of Colbert Unit 5 in the period immediately prior to the project in 1982. We conclude that this hearsay testimony is unreliable[115] and cannot substitute for the rigorous testing under prescribed protocols that is normally required by EPA

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[115] When EPA Enforcement cross-examined Mr. Houston regarding his interviews with the TVA maintenance personnel responsible for Colbert Unit 5 during the relevant time period, Mr. Houston could not answer many questions going to relevant dates of events and the basis of the non-testifying declarant's recollections. *See* Tr. at 985-93, 995. While hearsay evidence is commonly admitted in administrative adjudications, we need not rely on such testimony when, as here, it may be unreliable. *See, e.g.*, 40 C.F.R. § 22.22(a) (allowing unreliable evidence to be excluded).

before it accepts data other than the actual achieved rate. *See WEPCO*, 893 F.2d at 914-15 & nn.7 & 8. Indeed, in the *WEPCO* case (the one from which WEPCO sought court review), EPA Administrator Lee M. Thomas stated that EPA would not accept mere "assertions that higher-than-actual capacity could be achieved on a economically sustainable basis." Letter from Lee M. Thomas to John W. Boston, WEPCO, at 5 (Oct. 14, 1988).

Accordingly, we conclude that a preponderance of the evidence in the record shows that the physical changes to Colbert Unit 5 removed a physical limitation on the operating potential of the unit and restored it to its original design capacity, thereby resulting in an increase in the maximum hourly emissions rate achievable by the unit for NO_X, SO_2 and PM. Therefore, upon completion of the physical changes at Colbert Unit 5, that unit became subject to the operating restrictions of 40 C.F.R. part 60, subpart Da. TVA has stipulated that it "did not conduct performance testing or perform record keeping and reporting" under subpart Da. Accordingly, we find that TVA violated the NSPS with respect to the operation of Colbert Unit 5 after the physical changes at that unit.

In addition, in terms of TVA's compliance with the pre-1983 nonattainment NSR provisions of the Alabama SIP, the increased maximum hourly emissions rate means that the unit's potential SO_2 emissions increased from 78,104 tpy before the project to 97,630 tpy of SO_2 after the project. *See* EPA Enforcement Ex. 281. This increase greatly exceeds the 100 tpy potential emissions increase necessary to trigger the pre-1983 nonattainment NSR provisions of the Alabama SIP. *See* Regulation Stipulation tab 16, § 16.3.2. Accord-

ingly, we find that TVA violated the CAA by failing to obtain a preconstruction nonattainment NSR permit under the Alabama SIP.

F. *Violations of the State Minor Modification Permit Requirements*

As noted above in our discussion of the statutory background in Part III.B, the States of Tennessee, Kentucky and Alabama, where TVA's nine coal-fired power plants are located, require as part of their SIPs that source owners obtain "minor" NSR permits under certain circumstances. In the present case, EPA Enforcement argues that TVA was required to obtain a minor source permit for the following projects:

1. Under the Tennessee SIP for Memphis County, Allen Unit 3. EPA Enforcement Post-Hearing Brief at 74-75 (citing S1200-3-9-.01-(1) (Memphis/Shelby County portion of SIP)).

2. Under the Tennessee SIP, Bull Run Unit 1, Cumberland Unit 1 and Unit 2, John Sevier Unit 3, and Kingston Unit 6 and Unit 8. *Id.* at 75-76, 78-83 (citing 1200-3-9-.01-(1) (general Tennessee SIP)).

3. Under the Alabama SIP, Colbert Unit 5 and Widows Creek Unit 5. *Id.* at 77-78, 89-90 (citing Alabama Reg. 16.1.1(a)).

The Compliance Order also alleged that projects at the units located in Kentucky were each required to have a Kentucky "minor" NSR permit. However, as noted in Part III.A of this decision, EPA Enforcement has not made any further argument in its post-hearing briefs that TVA violated the requirements of the Kentucky minor NSR permitting program. Accordingly, such

allegations of the Compliance Order appear to have been abandoned and, therefore, are not sustained. Our discussion in this part will focus on the remaining projects and state minor permitting requirements.

TVA argues that the applicable minor NSR permitting regulations under the Alabama and Tennessee SIPs provide an exemption for "routine maintenance, repair and replacement" and that each of these projects fall within that exemption. In addition, TVA argues that the minor NSR permitting requirements of these SIPs "apply only where there is an increase in potential emissions or in emissions rates, the emission increase test used in the federal NSPS program." TVA Post-Hearing Brief at 120. TVA argues that EPA Enforcement failed to produce "any evidence that the identified projects at TVA's Tennessee and Alabama units resulted in increased emissions rates." *Id.* For the following reasons, these arguments must be rejected.

1. *Tennessee Minor NSR Permitting Requirements*

In the present case, Allen Unit 3 is located within the jurisdiction of the Memphis/Shelby County permitting authority and Bull Run Unit 1, Cumberland Unit 1 and Unit 2, John Sevier Unit 3, and Kingston Unit 6 and Unit 8 are all located within the jurisdiction of the Tennessee state permitting authority. While the regulations applicable to the Memphis/Shelby County area and the regulations applicable to the remainder of Tennessee are different in a number of particular respects, the specific regulations governing the applicability of the minor NSR permitting requirements are identical in both sets of regulations. Accordingly, for simplicity, we will refer to the broader Tennessee SIP

requirements as the surrogate for both sets of regulations.

The Tennessee SIP requires source owners to obtain a permit before beginning modification of an air contaminant source. Specifically, the SIP states as follows:

> Except as specifically exempted in Rule 12-3-9-.04, no person shall begin the construction of a new air contaminant source or the modification of an air contaminant source which may result in the discharge of air contaminants without first having applied for and received from the Technical Secretary a construction permit for the construction or modification of such air contaminant source.

Regulation Stipulation tab 1, § 16-77 (S1200-3-9-.01(1)); *id.* tab 3 (1200- 3-9-.01(1)). The term "air contaminant source" as used in this regulation is defined as follows:

> *Air Contaminant Source* is any and all sources of emission of air contaminants, whether privately or publicly owned or operated. Without limiting the generality of the foregoing, this term includes all * * * heating and power plants and stations * * *.

Id. tab 1, § 16-46(A); *id.* tab 4 (1200-3-2-.01(b)); *id.* tab 5 (1200-3-2- .01(b)). "Air Contaminant" is "particulate matter, dust, fumes, gas, mist, smoke, or vapor, or any combinations thereof." *Id.* tab 1, § 16-46(A); *id.* tab 4 (1200-3-2-.01(a)); *id.* tab 5 (1200-3-2-.01(a)). The Tennessee minor NSR rules define "modification" as follows:

> Modification is any physical change in or change in the method of operation of any air contaminant

> source, which increases the amount of any air contaminant (with an applicable emission standard) emitted by such source or which results in the emission of any air contaminant (with an applicable emission standard) not previously emitted * * *.

Id. tab 1, § 16-46(A); *see also id.* tab 4 (1200-3-2-.01(aa)); *id.* tab 5 (1200-3-2-.01(aa)).[116] The regulation also states that physical change shall not include "routine maintenance, repair and replacement." *Id.* tab 1, § 16-46(A); *id.* tab 4 (1200-3-2-.01(aa)); *id.* tab 5 (1200-3-2-.01(aa)).

EPA Enforcement argues that the changes made to Allen Unit 3, Bull Run Unit 1, Cumberland Unit 1 and Unit 2, John Sevier Unit 3, and Kingston Unit 6 and Unit 8, were "physical changes" within the meaning of these regulations which increased the amount of NO_X, SO_2 and PM emitted by the units. EPA Enforcement argues that increases in the amount of emissions must be measured based upon an actual-to-potential test.

As noted above, TVA argues that the changes to these units were not "physical changes" because the changes were routine maintenance, repair and replacement. TVA Response to Initial Brief at 14. TVA argues that the routine maintenance exception should be applied consistent to the similar exception under the PSD and nonattainment NSR programs. *Id.* Because, as discussed above in Part III.C, we have found that the identical routine maintenance exception under the PSD and nonattainment NSR programs does not apply to any of the changes at issue, we likewise conclude that

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[116] The definition of "modification" in the general Tennessee SIP contains an immaterial difference in that the two parenthetical statements used in the definition are "(to which an emission standard applies)," rather than as set forth in the text above.

this exception does not apply to those changes under the Tennessee SIP minor NSR program.

TVA also argues that the emissions increase test under the Tennessee SIP minor NSR program is not the actual-to-potential test suggested by EPA Enforcement, but instead is the maximum potential hourly rate increase applicable under the federal NSPS program. *Id.* at 14-15. TVA argues that the NSPS emissions test should apply because the definition of "modification" under the Tennessee minor NSR permit is identical to the definition of that term under the federal NSPS regulations. *Id.* (citing 40 C.F.R. § 60.2). This argument must be rejected because the federal NSPS emissions increase test (maximum hourly emissions rate) is derived from the regulations at 40 C.F.R. § 60.14, not from the definition of modification at section 60.2. The Tennessee SIP provisions identified in the parties' stipulations do not contain any provision prescribing in detail the method for calculating an emissions increase for a modification similar to that set forth in section 60.14 of the federal NSPS regulations. Accordingly, we find no basis to incorporate that set of regulatory requirements into the definition of "modification" in the Tennessee SIP.

For a similar reason, we also reject EPA Enforcement's arguments that the Tennessee SIP minor NSR modification definition should be read to incorporate the actual-to-potential test. The regulation from which the actual-to-potential test arises, 40 C.F.R. § 52.21(b)(21), has no analogue within the Tennessee minor NSR regulations. Accordingly, we again turn to

the actual-to-projected-actual test[117] discussed above in Part III.D.5, and determine that, through Mr. Van Gieson's testimony, EPA Enforcement has sustained its burden of showing that an emissions increase should have been predicted and that TVA was thus required to obtain a minor NSR permit from the applicable Tennessee or Memphis/Shelby County permitting authority.

Because the minor NSR regulations do not have a "significance" threshold of 40 tpy for NO_X and SO_2 and 25 tpy for PM, there are more violations of the minor permitting requirements than we found above with respect to PSD and nonattainment NSR. In particular, we find that TVA was required to obtain a Tennessee minor NSR permit for the following pollutants at the indicated units:

	NO_X	SO_2	PM
Allen Unit 3	X	X	
Bull Run Unit 1	X	X	X
Cumberland Unit 1	X		
Cumberland Unit 2	X		X
John Sevier Unit 3	X	X	
Kingston Unit 6	X	X	
Kingston Unit 8	X	X	X

TVA stipulated that it did not have a Tennessee minor NSR permit for any of these pollutants and

[117] In the absence of another legally prescribed methodology, here, as before, we find this test a reasonable means of measuring emissions increases. *See WEPCO*, 893 F.2d 901.

physical changes at these units. Joint Fact Stipulation ¶ 15. Accordingly, TVA violated the Tennessee SIP provisions prohibiting construction without a permit.

2. *Alabama Minor NSR Permitting Requirements*

Colbert Unit 5 and Widows Creek Unit 5 are located within Alabama and, therefore, are potentially subject to the Alabama minor NSR permitting requirements. The Alabama SIP states as follows:

> Permit to Construct. Any person building, erecting, altering, or replacing any article, machine, equipment, or other contrivance, the use of which may cause the issuance of or an increase in the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants, shall first obtain authorization for such construction from the Director in the form of a Permit to Construct.

Regulation Stipulation, tab 19, § 16.1.1(a); *see also id.* tab 20, § 16.1.1(a).[118] The term "air contaminant" as used in this regulation is defined as follows:

> "Air Contaminant" shall mean any solid, liquid, or gaseous matter, any odor, or any combination thereof, from whatever source.

Id. tab 21, § 1.2.1. The terms "building, erecting, altering, or replacing" as used in section 16.1.1 are not defined by the Alabama SIP.

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[118] The version of the applicable regulation at tab 20 of the Regulation Stipulation became effective October 28, 1985, and contains immaterial changes from the version quoted in the text above.

EPA Enforcement argues that the changes made to Colbert Unit 5 and Widows Creek Unit 5 fall within the terms "building, erecting, altering, or replacing" and that those changes increased the amount of NO_X, SO_2 and PM emitted by the units. EPA Enforcement argues that increases in the amount of emissions must be measured based upon an actual-to-potential test.

As noted above, TVA argues that the term "alteration" as used in section 16.1.1 is synonymous to "modification," which is defined by the Alabama SIP (that definition is substantially the same as the Tennessee definition of "modification" quoted above). TVA Response to Initial Brief at 16. TVA argues that because the two terms are ordinarily synonymous, we should apply the regulatory definition of "modification" in place of the term "alteration" as used by section 16.1.1. There are two errors in this argument. First, while the terms "alteration" and "modification" may be generally synonymous, it however does not follow that a highly detailed and specific regulatory definition of one term can be substituted for the other. Instead, we conclude that the much broader and more general plain meaning of "alteration" must be used in the absence of anything in the regulations suggesting a narrower regulatory definition. Second, by its suggested contrivance of incorporating the definition of "modification" in place of "alteration," TVA suggests that "routine * * * replacement" was not intended to be included as a form of alteration. *Id* at 17. Such an interpretation would violate the plain meaning of the regulatory text. Section 16.1.1 specifically includes "replacing" among its list of changes that may require a permit and does not provide for an exception for

"routine * * * replacement." We cannot by interpretation create an exception where one does not exist.

TVA also argues that the emissions increase test under the Alabama SIP minor NSR program is not the actual-to-potential test suggested by EPA Enforcement, but instead is the maximum potential hourly rate increase applicable under the federal NSPS program. *Id.* at 17. TVA argues that the NSPS emissions test should apply because the definition of "modification" under the Alabama SIP is substantially the same as the definition of that term under the federal NSPS regulations. *Id.* (citing 40 C.F.R. § 60.2). This argument must be rejected for two reasons. First, as noted above, the Alabama SIP minor NSR permitting requirements are based upon "building, erecting, altering, or replacing," not upon "modification"—the linchpin for NSPS coverage. *See* Regulation Stipulation, tab 19, § 16.1.1(a); *see also id.* tab 20, § 16.1.1(a). Second, the federal NSPS emissions increase test (maximum hourly emissions rate) is derived from the regulations at 40 C.F.R. § 60.14, not the definition of modification at section 60.2. Not only do the Alabama SIP minor NSR provisions fail to mention "modification," but they also do not contain any provision prescribing in detail the method for calculating an emissions increase for a modification similar to that set forth in section 60.14 of the federal NSPS regulations. Accordingly, we find no basis to incorporate the "maximum hourly emissions rate" requirement of the federal NSPS regulation into section 16.1.1 of the Alabama SIP governing when a minor NSR permit must be obtained.

For a similar reason, we also reject EPA Enforcement's arguments that the Alabama SIP minor NSR modification definition should be read to incorporate

the actual-to-potential test. The regulation from which the actual-to-potential test arises, 40 C.F.R. § 52.21(b)(21), has no analogue within the Alabama minor NSR regulations. Accordingly, we turn once more to the actual-to-projected-actual test discussed above in Part III.D.5, and determine that, through Mr. Van Gieson's testimony, EPA Enforcement has sustained its burden of showing that an emissions increased occurred and that TVA was thus required to obtain a minor NSR permit from the applicable Alabama permitting authority.

Because the minor NSR regulations do not have a "significance" threshold of 40 tpy for NO_X and SO_2 and 25 tpy for PM, there are more violations of the minor permitting requirements than we found above with respect to PSD and nonattainment NSR. In particular, we find that TVA was required to obtain an Alabama minor NSR permit for the following pollutants at the indicated units:

	NO_X (tpy)	**SO_2 (tpy)**	**PM (tpy)**
Colbert Unit 5	X	X	X
Widows Creek Unit 5	X	X	X

TVA stipulated that it did not have an Alabama minor NSR permit for any of these pollutants and changes at these units. Joint Fact Stipulation ¶ 15. Accordingly, TVA violated the Alabama SIP provisions prohibiting construction without a permit.

G. *The Appropriate Remedies for TVA's Violations*

The Compliance Order states, in lettered paragraphs from (a) to (i), various actions that TVA must take in order to remedy the violations identified in the Compliance Order. TVA has objected to these remedies, arguing generally that many of them are not authorized by the CAA. In this part, we consider TVA's arguments and EPA Enforcement's responses.

In summary, the Compliance Order directs TVA to undertake the following actions to remedy its violations of the CAA: (1) TVA shall "provide a detailed schedule with appropriate milestones submitted for approval by EPA for achieving compliance with all NSR (both PSD and nonattainment NSR) requirements," which schedule shall identify the pollution control technology to be installed on the plants with nothing less protective than selective catalytic reduction ("SCR") for NO_X emissions control. Compliance Order § IV.1(a); (2) TVA shall provide a schedule for complying with all NSPS requirements, § IV.1(b); (3) TVA shall enter into a "Federal Facilities Compliance Agreement" regarding such schedules, *id.* § IV.1(c);[119] (4) TVA shall submit to the appropriate federal, state and local authority applications for NSR permits and Title V[120] operating permits for the modifications identified in the order, *id.* § IV.1.(d); (5) TVA shall provide EPA an audit of each of its coal- fired power plants to identify all physical changes made since 1977 that may have triggered the

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[119] TVA has not objected to this requested remedy and, accordingly, it is sustained.

[120] TVA has not objected to this requested remedy (that it be required to submit applications for Title V operating permits) and, accordingly, it is sustained.

NSR and NSPS requirements, *id.* § IV.1(e); (6) TVA shall prepare a compliance schedule and Federal Facilities Compliance Agreement for all violations identified in the audit. *Id.* § IV.1(f), (g);[121] and (7) finally, TVA must retire and not use certain SO_2 allowances under CAA Title IV. *Id.* § IV.1(h).

TVA raises a number of objections to the remedy sections of the Compliance Order. Briefly, TVA objects to the remedy requests in sections IV.1(a), (b), (d), (f) and (g) with respect to submission of compliance schedules and the means for determining best available control technology ("BACT") with respect to NO_X. TVA also objects to the request that TVA be required to provide an audit as set forth in section IV.1(e) and to the request that it be required to surrender SO_2 allowances in section IV.1(h). These arguments will be discussed below.

1. *Compliance Schedules, Applications, BACT for NO_X and Related Issues*

TVA has raised a number of related arguments regarding the compliance schedule and permit application remedies under sections IV.1(a), (b), (d), (f) and (g). Specifically, TVA argues that EPA Enforcement has no authority to specify that the control technology for NO_X shall be no less protective than SCR. TVA Post-Hearing Brief at 107. Rather, TVA argues that control technology determinations must be made on a case-by-case basis by the appropriate federal, state or local authority. *Id.* at 108. TVA argues further that the compliance schedule and control technology require-

[121] TVA has not objected to this requested remedy in so far as it concerns entering into a Federal Facilities Compliance Agreement and, accordingly, it is sustained.

ments of the Compliance Order impermissibly "foreclose options available to a stationary source under the Clean Air Act and EPA's regulations, including the option to net out of new source review." *Id.*

EPA Enforcement acknowledges that BACT must be determined on a case-by-case basis by the applicable permitting authority.[122] EPA Enforcement states that the Compliance Order simply "sets forth the minimum level of controls [EPA Enforcement] will accept to resolve the case." EPA Enforcement Reply Brief at 65. EPA Enforcement states further as follows:

> [B]y identifying SCR as the minimum acceptable NO_X pollution control device, EPA was merely

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[122] The BACT requirement is defined in the regulations as follows:

> [BACT] means an emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under [the] Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

40 C.F.R. § 52.21(b)(12); *accord* CAA § 169(3), 42 U.S.C. § 7479(3). As the Board has noted on prior occasions, "[t]he requirements of preventing violations of the NAAQS and the applicable PSD increments, and the required use of BACT to minimize emissions of air pollutants, are the core of the PSD regulations." *In re Encogen Cogeneration Facility*, PSD Appeal Nos. 98-22 to -24, slip op. at 5 (EAB, Mar. 26, 1999), 8 E.A.D. ___; *accord In re Hawaii Elec. Light Co.*, PSD Appeal Nos. 97-15 to -23, slip op. at 11 (EAB, Nov. 25, 1998), 8 E.A.D. ___.

> treating TVA as it would a nongovernmental entity, and not undermining the statutory BACT process. EPA was not, as TVA alleges, attempting to usurp the BACT case-by-case analysis performed by the permitting agency, as set forth in the Act and regulations. Indeed, the [Compliance Order] instructs TVA to submit applications for the appropriate federal, state and local air NSR permits, which applications should include a BACT/LAER analysis, as appropriate.

Id. at 66.[123] Because EPA Enforcement has interpreted the Compliance Order's statements with respect to SCR as BACT for NO_X emissions controls as something to be secured through settlement rather than as a substitute for traditional BACT/LAER analysis, we hold that EPA Enforcement shall be bound by this interpretation. Accordingly, TVA is not bound by EPA Enforcement's assertion, as made in the Compliance Order, that SCR is the minimum pollution control for NO_X.[124]

It further appears that both TVA and EPA Enforcement generally agree that an appropriate remedy for TVA's failure to obtain preconstruction PSD,

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[123] "BACT/LAER" stands for "Best Available Control Technology/Lowest Achievable Emission Rate." Each of these acronyms refers to technological standards established by different sections of the CAA. BACT is the standard from the PSD provisions of the CAA and LAER is the standard for nonattainment NSR provisions.

[124] However, in the case-by-case BACT determination process conducted by the applicable permitting agency (*see infra* note 127), EPA Enforcement, or any other appropriate part of the Agency, is not precluded from commenting on the BACT analysis or other parts of the permit, including but not limited to SCR being the appropriate minimum pollution control.

nonattainment NSR and minor NSR permits is for TVA to be required to apply for such permits. *See* EPA Enforcement Reply Brief at 66 ("the [Compliance Order] instructs TVA to submit applications for the appropriate federal, state and local air NSR permits, which applications should include a BACT/LAER analysis, as appropriate."); TVA Post-Hearing Brief at 118 ("That determination [BACT] must be made by the appropriate state and be based upon a case-by-case, site-specific balancing, of energy, environmental and economic impacts and other costs of the controls available to the units.").[125]

Although TVA appears to concede that requiring it to obtain the necessary NSR permits is generally an appropriate remedy, TVA nevertheless argues that the compliance schedule and control technology requirements of the Compliance Order impermissibly "foreclose options available to a stationary source under the Clean Air Act and EPA's regulations, including the option to net out of new source review." TVA Post-Hearing Brief at 108. TVA thus argues that it may

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[125] TVA does argue that EPA does not have "authority for its order for compliance schedules and permit applications" under CAA § 167, 42 U.S.C. § 7477. TVA Response to Initial Brief at 75. TVA, however, does not argue that such authority is lacking under CAA § 113(a), 42 U.S.C. § 7413(a), which specifically authorizes the Agency to issue administrative orders requiring the respondent to "comply with the requirements or prohibitions" that the respondent has violated. Since we have found that TVA violated the CAA by failing to obtain preconstruction NSR permits, it is appropriate that TVA be required under section 113 to comply by applying for such permits. Thus, we conclude that section 113(a) provides adequate authority for these portions of the Compliance Order and, therefore, we do not address TVA's assertions regarding the scope of EPA's authority under CAA § 167.

avoid the permitting requirements by electing to reduce emissions elsewhere at the pollution sources—in other words, by making creditable contemporaneous reductions to qualify for "netting" under 40 C.F.R. § 52.21(b)(3)(ii).

This argument must be rejected on the grounds that TVA has failed to show, based on evidence in the record of this proceeding, that it made the required "contemporaneous" emissions reductions (i.e., emissions reductions in the period between five years before the construction commenced and the date when the predicted increases from the physical change would occur). *See, e.g., In re Hawaii Elec. Light Co.*, PSD Appeal Nos. 97-15 to -23, slip op. (EAB, Nov. 25, 1998), 8 E.A.D. ___. Had TVA sought to defend against the Compliance Order's request for relief that TVA must obtain NSR permits based on its claiming contemporaneous emissions reductions, it should have done so in this proceeding. The "netting" option for avoiding the requirement to obtain an NSR permit is provided by the regulatory definition of "net emissions increase." *See, e.g.*, 40 C.F.R. § 52.21(b)(3) (1984). As discussed in Part III.D above, we have found, based upon the record of this case, that the physical changes made by TVA to thirteen of its coal-fired units resulted in significant "net emissions increases" under the applicable regulatory provisions. TVA, therefore, is barred from subsequently attacking this determination by attempting to demonstrate contemporaneous emissions reductions that offset the emissions increases demonstrated on the record of this case. Accordingly, we reject TVA's contention that it may "net out of new source review."

For the foregoing reasons, we sustain the Compliance Order's requirement that TVA apply for, and

obtain, PSD, nonattainment NSR and minor NSR permits for the physical changes made to the units and with respect to the pollutants indicated in Parts III.D, III.E and III.F of this decision.[126] Such applications must be filed, and permits obtained, by TVA for the following units and pollutants:[127]

For PSD and nonattainment NSR:

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[126] TVA's permit applications should be governed by the rules that are in force at the time each application is submitted. Thus, the applications should be submitted to the agency with authority as of the date of the application to issue permits for the particular pollutant in each area. TVA's applications will open a new administrative record before those agencies with respect to the BACT/LAER determinations and the analysis of appropriate pollution controls should take into account all information submitted into the record regarding any factors relevant under the applicable statutory or regulatory requirements, such as technological feasibility and environmental impacts. *See, e.g., In re Pennsauken County, N.J. Resource Recovery Facility*, 2 E.A.D. 667, 670-71 nn.10-12 (Adm'r 1988) (noting that the adequacy of the administrative record is judged as of the close of the record, absent extraordinary circumstances). Thus, we reject TVA's contention that the analysis should look to the circumstances that existed when TVA made the physical changes to its plants. TVA is responsible for the delay in applying for the applicable permits and, therefore, cannot argue that requiring current technology somehow causes it prejudice. That the analysis should not be based on substantially outdated evidence is further confirmed by 40 C.F.R. § 52.21(r)(2), which states that a permit is "invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time."

[127] These summary charts are the ones also set forth in Part III.A of this decision.

Chart No. 2

	NO_X	SO_2	PM
Allen Unit 3	X	X	
Bull Run Unit 1	X	X	
Colbert Unit 5	X	X	X
Cumberland Unit 1	X		
Cumberland Unit 2	X		
John Sevier Unit 3		X	
Kingston Unit 6	X	X	
Kingston Unit 8	X	X	
Paradise Unit 1	X		
Paradise Unit 2	X		
Paradise Unit 3	X		
Shawnee Unit 1	X	X	
Shawnee Unit 4	X	X	

For minor NSR under the applicable SIPs:

Chart No. 3

	NO_X	SO_2	PM
Allen Unit 3	X	X	
Bull Run Unit 1	X	X	X
Cumberland Unit 1	X		
Cumberland Unit 2	X		X
John Sevier Unit 3	X	X	
Kingston Unit 6	X	X	

Kingston Unit 8	X	X	X
Colbert Unit 5	X	X	X
Widows Creek Unit 5	X	X	X

2 *Forfeiture of Title IV (Acid Deposition Control) SO_2 Allowances*

TVA objects to the request of Section IV.1(h) of the Compliance Order that TVA surrender certain SO_2 "allowances"[128] allocated to it under Title IV of the CAA. According to EPA Enforcement, the surrender of these allowances is necessary to bring TVA into compliance with the Act and to compensate the environment for TVA's past NSR and PSD violations. EPA Enforcement Initial Brief at 56; EPA Enforcement Post-Hearing Brief at 175. Section IV.1(h) of the Compliance Order states:

> *Sulfur Dioxide Allowances.* For any reductions in sulfur dioxides that result from the addition of pollution control equipment under the federal facility compliance agreement to be entered into pursuant to paragraphs 1(c) and 1(g) above, sulfur dioxide allowances from Title IV of the Clean Air Act equivalent to the reductions must be retired and cannot be used by TVA or sold to any other utility.

TVA objects to this provision on several grounds, including that the Agency lacks the authority under section 113 of the Act to require surrender of its existing SO_2 allowances, and that the provision lacks

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[128] The term "allowance" is defined as an "authorization, allocated to an affected unit by the Administrator under this subchapter, to emit, during or after a specified calendar year, one ton of sulfur dioxide." CAA § 402(3), 42 U.S.C. § 7651a(3).

the specificity required by section 113(a)(4). *See* TVA Response to Initial Brief at 81-89; TVA Reply Brief at 62-66.

Title IV of the CAA, added by the 1990 CAA amendments, is designed to reduce emissions of pollutants contributing to the problem of acid deposition (often referred to as "acid rain"). With regard to SO_2 emissions, the Act requires a phased implementation ("Phase I" and "Phase II") of a national cap of 8.95 million tons per year from electric utility plants such as the ones at issue in this matter. The reduction of SO_2 is achieved by giving affected units allowances, which then determines the amount of annual SO_2 the source is authorized to emit. A unit subject to Title IV may not emit SO_2 in excess of the number of allowances held for that unit for that year by the unit's owner or operator. CAA § 403(g), 42 U.S.C. § 7651b(g). The number of allowances allocated to each unit is determined through various formulae utilizing a unit's emissions and fuel consumption.

During Phase I of the program, effective from 1995 through 1999, limits were imposed on the 110 largest sulfur-emitting electric utility plants in twenty-one eastern and midwestern states. CAA § 404(a), 42 U.S.C. 7651c(a). The basic SO_2 allocation formula for Phase I involved multiplying an emissions rate of 2.5 pounds of SO_2 per million British Thermal Units ("BTUs") of heat by a unit's "baseline" fuel consumption (generally the unit's 1985-87 average). *Id.*[129] Phase II, effective in January 2000, applies to all fossil fuel-fired electricity

[129] TVA maintains that five of the nine plants at issue in this case were subject to Phase I. TVA Response to Initial Brief at 84. These appear to be Colbert, Allen, Cumberland, Paradise, and Shawnee. *See* CAA § 404 Table A, 42 U.S.C. § 7651c Table A.

generating units and employs a somewhat similar method to determine SO_2 allowances.[130] However, for almost all the regulated sources, the emissions rate by which the baseline is to be multiplied is reduced from 2.5 pounds of SO_2 per million BTUs to 1.2 pounds to exact further reductions of SO_2 emissions. In certain instances, the applicable formulae utilize a unit's actual or allowable 1985 emissions rate in determining the number of allowances allocated. *See, e.g.*, CAA §§ 404(a), 405(c), 42 U.S.C. § 7651c(a), § 7651d(c).

According to EPA Enforcement, because of the alleged NSR and PSD violations, the incorrect emissions data from 1985 "*may* have been used" in allocating TVA's SO_2 allowances and "[t]hus the current allocation of SO_2 allowances to TVA plants *may* be improperly inflated." EPA Enforcement Initial Brief at 57 (emphasis added). "Consequently, any plan undertaken to return TVA to full compliance with the Clean Air Act must include the reallocation of SO_2 allowances to TVA. Similarly, to return the environment to where it would have been but for TVA's NSR/PSD violations, TVA should surrender a quantity of allowances equal to the amount of emissions it emitted based upon its reliance on its improper allowances * * *." *Id.* EPA Enforcement further asserts that TVA must offset any excess emissions that occurred as a result of its violations. *Id.* Upon review, EPA Enforcement has failed to convince us that any forfeiture or reallocation of allowances is appropriate under the current state of the record.

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[130] As EPA notes, "[t]he allowance allocation scheme established under Title IV is complex, relying on numerous formulae." EPA Enforcement Initial Brief at 57. The summary in the text above is not intended as a comprehensive statement of these formulae.

Although it is certainly conceivable that the CAA violations at certain of TVA's facilities may have resulted in a misallocation of SO_2 allowances, EPA Enforcement cites to no evidence that any such misallocation actually occurred. Rather, EPA Enforcement merely speculates that the violations may have had some effect on the 1985 SO_2 emission levels and that this may have resulted in TVA being awarded more SO_2 allowances than it would have otherwise been entitled under the applicable allowance formula. Indeed, EPA Enforcement itself acknowledges that it has not completed its analysis on the extent of the violations. *Id.* at 56.[131] As far as we can tell from the record before us, it may well be that once EPA Enforcement has completed its analysis, EPA Enforcement may determine that SO_2 allowances were not improperly allocated.[132] Similarly, although EPA En-

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[131] EPA Enforcement states as follows:

> TVA must comply with a reallocation of its Phase II allowances, which will be performed once the extent of its NSR/PSD noncompliance is ascertained. Second, it must offset emissions equal to the amount of excess allowances it may have relied on for the period beginning in 1995 and ending when the reallocation is complete. Third, TVA must provide emission reductions, perhaps through allowance forfeiture, to offset the excess emissions that occurred under Title I in order to render the Environment whole.

EPA Enforcement Initial Brief at 56.

[132] We note further, as TVA points out, that although the majority of the projects identified in the Compliance Order were undertaken after 1985 (TVA Response to Initial Brief at 83), section IV.1(h) of the Compliance Order calls for the surrender of allowances equivalent to *all* reductions made pursuant to the Compliance Order. Because EPA Enforcement alleges that unreliable 1985 data may have led to improper allocation, such language in the order would appear to be overbroad in that only

forcement argues that the environment should be compensated for excess emissions during the period of violation through a surrender of existing SO_2 allowances, EPA Enforcement has not provided the Board with sufficient data to determine if such a surrender is appropriate in this case. *See id.* at 56 n.55 ("At this time, EPA Enforcement has not determined the exact amount of allowances that would have to be retired in order for there to be a sufficient remedy under both Title IV and Title I, but when that amount is determined EPA Enforcement is prepared to seek forfeiture of only that amount.").

Under these circumstances, the record is insufficient to support the surrender of SO_2 allowances contemplated by section IV.1(h) of the Compliance Order. Moreover, based on the representations in EPA Enforcement's own briefs, it appears as if EPA's request for relief is not yet ripe.[133] If, however, upon completion of its analysis, EPA Enforcement continues to believe that a reallocation and/or surrender of SO_2 allowances is appropriate, EPA Enforcement is not precluded by this order on reconsideration from pursuing that avenue of relief in an appropriate proceeding.[134] In any case, for

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the Paradise and Colbert modifications were undertaken during 1985 or before.

[133] We note, as discussed above, that section IV.1(e) of the Compliance Order requires that TVA conduct an audit of each of its coal-fired power plants to determine the extent of any additional violations. Once this audit is completed, EPA Enforcement may have a better understanding of the extent of the violations and the need for the reallocation and/or surrender of any SO_2 allowances.

[134] *See, e.g.*, CAA § 403(f), 42 U.S.C. § 7551b(f) ("Nothing in this subchapter or in any other provision of law shall be construed to limit the authority of the United States to terminate or limit [SO_2

the reasons stated above, we decline to grant such relief here.[135]

3. *Authority to Require an Audit*

Section IV.1(e) of the Compliance Order states that TVA shall, under the authority of CAA § 114, 42 U.S.C. § 7414,[136]

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allowances]."); CAA § 113(a)(3), 42 U.S.C. § 7413(a)(3). In addition, we note that 40 C.F.R. part 77 provides procedures whereby owners and operators of units with excess SO_2 emissions are required to offset the amount of such excess emissions. *See* 40 C.F.R. § 77.3(a). Furthermore, the Region may seek penalties for excess SO_2 emissions in the amount of $2000 per ton multiplied by an annual adjustment factor. *Id.* § 77.6(b). We do not decide whether these procedures are or are not applicable in the context of this case.

[135] Because we conclude that EPA Enforcement has not presented sufficient evidence supporting the inclusion of section IV.1(h) in the Compliance Order, we do not address TVA's assertion that EPA Enforcement lacked the authority to include this provision under section 113 of the CAA, 42 U.S.C. § 7413, and the other related arguments TVA raised in its briefs.

[136] Section 114(a) states, in pertinent part:

> For the purpose (i) of developing or assisting in the development of any implementation plan under section 7410 or section 7411(d) of this title * * * [or] (ii) of determining whether any person is in violation of any requirement of such a plan * * *
>
> (1)The Administrator may require any person who owns or operates any emission source * * * who the Administrator believes may have information necessary for the purposes set forth in this subsection, or who is subject to any requirement of this chapter * * * on a one-time, periodic or continuous basis to:
>
> (A) establish and maintain such records;
>
> (B) make such reports;

provide to EPA an audit of each of its coal-fired power plants that identifies all physical changes made since January 1, 1977 that may have triggered the NSR (both PSD and nonattainment NSR) and NSPS requirements of the Clean Air Act or any applicable state plans.

This request for relief would require TVA to provide certain information for projects conducted from January 1, 1977, through December 31, 1999, "in which any component of an electric utility steam generating unit which has a useful life of more than ten years was replaced, enhanced, redesigned, or otherwise physically altered." The information sought includes the following:

> (i) the cost of the project and where the funds for the project came from (*e.g.* capital expenditure, plant maintenance budget, etc.);
>
> (ii) a description of the project activities, including any and all design changes between the existing component and its replacement;
>
> (iii) the amount of time of the scheduled outage in which the project was carried out;
>
> (iv) the purpose of the project, including any discussion of why the project is needed (*e.g.* forced outage rates, reduced capacity, etc.

(C) install, use, and maintain such monitoring equipment, and use such audit procedures, or methods; [and]

* * * *

(G) provide such other information as the Administrator may reasonably require * * *.

* * *) and what are the anticipated benefits of the project (*e.g.* life extension of the unit, regained capacity, eliminate derating, etc.);

(v) the age of the unit and the date of the last time this same project or a similar project was undertaken with respect to that unit or any other units at the facility;

(vi) whether the project is part of a series of projects at the unit or facility to regain lost generation, increase capacity or extend the life of the unit or facility;

(vii) the projected future emissions (for NO_x, SO_2, and PM) that will result from the project as would have been calculated by TVA before the project was conducted. The calculated emissions shall include the maximum hourly emission rate as well as the annual emissions increase for NO_x, SO_2, and PM;

(viii) the actual emissions that occurred at the unit and the facility for the five years after the project was completed or if the project was completed after November 1995, for each year since the project was completed. The actual emissions shall include the maximum hourly emission rate as well as the annual emissions increase for SO_2, NO_x, and PM.; and

(xi) a conclusion by TVA whether NSR and/or NSPS has been triggered by the physical change based on the information in items (i) through (viii).

Compliance Order § IV.1(e).

TVA asserts that the audit provision is not properly before the Board at this time. TVA Response to Initial Brief at 76. In particular, TVA states that the audit requirement is an information request under CAA § 114, 42 U.S.C. § 7414, and that it is therefore not part of the Compliance Order. Thus, according to TVA, because the Board's jurisdiction in this matter is limited by the Administrator's May 4 Memorandum to conducting proceedings and issuing a decision on reconsideration of the Compliance Order, the Board lacks jurisdiction to consider the audit provision at issue here. TVA Response to Initial Brief at 76-77. TVA further states that the audit provision cannot be made part of the Compliance Order. According to TVA, "[o]nly if TVA refuses to comply with a § 114 information request can it become the subject of a compliance order under section 113(a)(3)." *Id.* at 77.

Examination of the Administrator's Memorandum reveals that the Administrator clearly intended that the Board's proceedings on reconsideration include all material provisions of the Compliance Order, including the audit requirement. The Administrator delegated to the Board the authority "to conduct appropriate proceedings upon reconsideration of the Order cited above." Administrator's Memorandum at 2. On the first page of her delegation memorandum the Administrator states that the term "Order" refers to the November 3 Administrative Order *as well as subsequent revisions.* This would include the Fourth Amended Order and Request for Information. Moreover, the Administrator noted that at a December 20, 1999 meeting between TVA and the Regional Administrator, TVA had requested reconsideration of the Order and submitted its Response to the Admini-

strative Order. In that response, TVA objected to EPA's authority under CAA § 113 to order TVA to conduct an audit. Thus, TVA's objection to the audit provision was included in documents forming the basis for the Administrator's Memorandum. We therefore read the Memorandum broadly to include all provisions of the Fourth Amended Order and Request for Information, including the audit requirement.

Further, although TVA is correct that the audit provision constitutes an information requirement, the Compliance Order is styled as an order *and request for information.* Thus, the title of the order makes clear that it contains both compliance and information requirements. While TVA may be correct that the audit provision could be the subject of a Compliance Order under CAA § 113(a)(3), 42 U.S.C. § 7413(a)(3), should TVA fail to fully comply, we find nothing improper in the Region's decision to combine a compliance order with an information requirement. TVA's assertions in this regard are therefore rejected.

TVA also questions the reasonableness of the audit provision. TVA does not dispute the Region's authority to require information from regulated power plants under CAA § 114(a), 42 U.S.C. § 7414(a). Rather, TVA argues that the audit provision may be overbroad depending on how it is interpreted by the Region.[137] In

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[137] TVA states that on May 22, 2000, it submitted information to the Region satisfying the audit requirement. TVA Response to Initial Brief at 80. To our knowledge, the Region has not responded to TVA's statement regarding the sufficiency of this information. As this issue is not before the Board at this time, we do not reach the question of whether the information provided by TVA satisfies the audit requirement. We would only note that in satisfying the audit requirement, TVA's compliance must be

this regard, TVA states that it "reserves the right to object on 'reasonableness' grounds" if the Region determines that the information already provided does not meet the audit requirement. TVA Response to Initial Brief at 80.

While we certainly agree with TVA that a request for information under CAA § 114 must be a reasonable one (CAA § 114(a)(1)(G), 42 U.S.C. § 7414(a)(1)(G)), we have reviewed the above-quoted audit provision and conclude that it satisfies this requirement. The information requested bears directly on whether a violation of the CAA has occurred, and the request appears reasonably tailored to elicit that information. That is, sections (i) through (vi) quoted above seek information necessary to determine if any projects were within the scope of the routine maintenance, repair, and replacement exception to the physical change requirement. *See* 40 C.F.R. § 52.21(b)(2)(iii). Sections (vii) and (viii) seek information on whether changes resulted in any emissions increases. Requiring that TVA provide this information does not strike us as unreasonable, especially considering that the Board has already found numerous other violations of the Act. *See supra* Parts III.D-G. Further, as far as we can tell from the record before us, TVA has not indicated that it would be unable to comply with the information request, nor has TVA sought additional time to do so. Under these circumstances, TVA's objections to the audit requirement are rejected.[138]

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consistent with the Board's interpretations and determinations in this decision.

[138] TVA has also argued that the audit requirement is not authorized by CAA § 167, 42 U.S.C. § 7477. However, because we

III. *CONCLUSION*

For the foregoing reasons, we reach the following conclusions.

We conclude that EPA Enforcement has met its burden of establishing that each of the fourteen projects constitutes a physical change under the CAA and applicable regulations and that TVA has not met its burden of establishing that any of the projects fall within the exception for routine maintenance, repair and replacement. In reaching this conclusion we apply the four-factor test advocated by EPA Enforcement and adopted by the Seventh Circuit in its *WEPCO* decision to determine whether a change falls within the scope of the exception. The four-factor test is reasonable and consistent with the statute, regulations, and case law. In contrast, we reject TVA's view of the breadth of the exception as it would, in our view, swallow the rule that subjects existing sources to the requirement to install modern pollution controls when physical changes that increase emissions are made to these plants. In addition, we reject TVA's "fair notice" arguments, concluding instead that the Agency's interpretation was "ascertainably certain" from the regulation's text and its context. Moreover, given the magnitude and circumstances of the projects at issue here, TVA reasonably should have been on notice that these projects may not qualify for the routine maintenance, repair and replacement exception. We also conclude that TVA has not shown that EPA has changed its interpretation of the exception.

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conclude that the audit requirement is authorized by section 114(a), we need not address TVA's argument in this regard.

Findings of Violations That Are Vacated

We vacate the following findings of violation of the Compliance Order on the grounds that such claims have either been abandoned by EPA Enforcement during the course of this proceeding or that EPA Enforcement failed to sustain its burden of proof with respect to whether the physical changes resulted in an emissions increase:

(1) *NSPS violation at Paradise Unit 3.* EPA Enforcement has abandoned its claim that the physical changes to Paradise Unit 3 violated the NSPS.

(2) *Emissions violation of the NSPS at Colbert Unit 5.* With respect to Colbert Unit 5, EPA Enforcement introduced no evidence as to whether the post-change emissions from Colbert Unit 5 exceeded the NSPS emissions standards of 40 C.F.R. part 60, subpart Da (however, as discussed below EPA Enforcement did demonstrate other NSPS violations at Colbert Unit 5).

(3) *Kentucky minor NSR violations.* EPA Enforcement has abandoned its claims that the physical changes made to Paradise Units 1, 2, and 3 and Shawnee Units 1 and 4 required a Kentucky minor NSR permit.

(4) *PSD or nonattainment NSR claims that EPA Enforcement has abandoned regarding NSR permitting for certain pollutants.* EPA Enforcement abandoned claims that the changes to the following units result in a significant net emissions increase with respect to the following pollutants:

Allan Unit 3 – PM
Cumberland Units 1 and 2 – SO_2
John Sevier Unit 3 – PM

Kingston Unit 6 – PM
Paradise Units 1, 2 and 3 – SO_2 and PM
Shawnee Unit 1 – PM
Shawnee Unit 4 – PM

Accordingly, we vacate the Compliance Order's statements regarding violations for these pollutants at these units.

(5) *PSD or nonattainment NSR violations as to which EPA Enforcement failed to sustain its burden of proof.* EPA Enforcement failed to sustain its burden of proof that the changes to the following units result in a significant net emissions increase with respect to the following pollutants:

Bull Run Unit 1 – PM;
Cumberland Unit 1 – PM;
Cumberland Unit 2 – PM;
John Sevier Unit 3 – NO_X;
Kingston Unit 8 – PM;
Widows Creek Unit 5 – NO_X, SO_2, and PM.

Accordingly, we vacate the Compliance Order's statements regarding violations for these pollutants at these units.

Findings of Violations That Are Sustained

With respect to the following claims of violation for the identified pollutants at the indicated units, we sustain the Compliance Order's findings of violation of the CAA's PSD and/or nonattainment NSR permitting requirements:[139]

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[139] This chart is a reproduction of the Chart No. 2 set forth in Part III.A of this decision, where we provide a more detailed summary of our conclusions.

	NO_x	SO_2	PM
Allen Unit 3	X	X	
Bull Run Unit 1	X	X	
Colbert Unit 5	X	X	X
Cumberland Unit 1	X		
Cumberland Unit 2	X		
John Sevier Unit 3		X	
Kingston Unit 6	X	X	
Kingston Unit 8	X	X	
Paradise Unit 1	X		
Paradise Unit 2	X		
Paradise Unit 3	X		
Shawnee Unit 1	X	X	
Shawnee Unit 4	X	X	

With respect to the following claims of violation for the identified pollutants at the indicated units, we sustain the Compliance Order's findings of violation of the minor NSR permitting requirements of the applicable state SIPs:[140]

	NO_x	SO_2	PM
Allen Unit 3	X	X	
Bull Run Unit 1	X	X	X
Cumberland Unit 1	X		

[140] This chart is a reproduction of Chart No. 3 set forth in Part III.A of this decision, where we provide a more detailed summary of our conclusions.

Cumberland Unit 2	X		X
John Sevier Unit 3	X	X	
Kingston Unit 6	X	X	
Kingston Unit 8	X	X	X
Colbert Unit 5	X	X	X
Widows Creek Unit 5	X	X	X

We also sustain the Compliance Order's findings of violation of the NSPS performance testing, record keeping and reporting requirements of 40 C.F.R. part 60, subpart Da at Colbert Unit 5.

Sustained and Vacated Remedy Provisions of Compliance Order

With respect to the Compliance Order's remedies for the violations identified above, we briefly summarize here our conclusions and analysis previously set forth in Part III.G. There, we vacate Compliance Order section IV.1(h) regarding surrender of SO_2 allowances subject to our discussion in Part III.G.2.[141] We sustain the requirements that TVA submit schedules for it to come into compliance with the CAA with respect to the violations sustained by this decision and, more generally, the requirements set forth in sections IV.1(a) to (g) of the Compliance Order. We also specifically sustain the requirements that TVA apply for, and obtain, NSR permits for the units and pollutants as to which we have

[141] As discussed in Part III.G.2 of this decision, if upon completion of its analysis, EPA Enforcement continues to believe that a reallocation and/or surrender of SO_2 allowances is appropriate, EPA Enforcement is not precluded by this order on reconsideration from pursuing that avenue of relief in an appropriate proceeding.

sustained the findings of violation (Compliance Order section IV.1(d)). With respect to the Compliance Order's statements in section IV.1(a) that SCR shall be the minimum controls for NO_X emissions, as more fully discussed in Part III.G.1, we hold that EPA Enforcement shall be bound by its interpretation of such statements as its settlement position and we further hold determination of what constitutes BACT and LAER must be made on a case-by-case basis, by the applicable permitting authority, consistent with the requirements in effect at the time of the permit applications. Subject to our discussion in Part III.G.3, we also sustain the portions of the Compliance Order requiring TVA to perform an audit of its coal-fired electrical generating units and remedy violations identified by the audit (Compliance Order sections IV.1(e), (f), (g)).

So ordered.

APPENDIX A

PROJECT-BY-PROJECT FINDINGS REGARDING THEROUTINE MAINTENANCE EXCEPTION

The following is a detailed discussion of our findings regarding whether the individual projects undertaken by TVA fall within the routine maintenance, repair and replacement exception under NSR.

A. *Allen Plant Unit 3*

The Allen Plant is located in Shelby County, Tennessee and began operations in 1959.[142] The project under review involved a Fall 1992 scheduled outage[143] in which TVA replaced several boiler components, including the existing horizontal reheater with a redesigned reheater. EPA Enforcement Ex. 279, at 17 (Hekking's pre-filed testimony). In reviewing the record, we find several facts significant in applying the four factor test.

1. *Nature and Extent*

TVA began planning this project in 1990. Given the project's significance, approval was required from TVA's Board of Directors. The project, which was

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[142] Originally, Memphis Light, Gas and Water Division ran the plant. In July of 1965, TVA began running the plant, and, in 1985, TVA became the sole owner of the plant.

[143] A scheduled outage is a planned shutdown as distinguished from a forced outage which occurs when components or portions of components fail causing the unit to shutdown unexpectedly. Mr. Randolph testified at the hearing that the length of time a forced outage would shut down a unit could range from hours to five days. Tr. at 111. According to Mr. Hekking, a scheduled outage, which typically occurred once every eighteen months, generally lasted four weeks. Tr. at 225.

managed by TVA's central office instead of the plant's maintenance department, was completed in 1993. During the actual implementation of the project, TVA shut down the unit for three months. EPA Enforcement Ex. 273. In *WEPCO*, the court found the length of the shutdown to bear on the magnitude of the project. *WEPCO*, 893 F.2d. at 911. Although the shutdown time here is shorter than that in *WEPCO*, we nevertheless find it to be significant, given that scheduled maintenance outages are typically limited to four weeks. *See* Tr. at 225. The extent of this project is illustrated by Mr. Hekking's testimony, in which he states:

> The entire boiler was stripped of external lagging and insulation to make access for the structural modifications required for the conversion from positive furnace pressure to negative. An opening was cut in the furnace sidewall and a platform constructed for the removal and reinstallation of the reheater elements. A railroad track was built from the platform into the building for the movement of the elements back and forth. The building's structural steel was reinforced to support the additional weight. A monorail system was constructed inside the boiler to move the elements in and out, onto a trolley built for the railroad track to run between the boiler and the outside platform. The old elements were cut loose from the boiler, loaded onto the trolley, and rolled out to the platform where a mobile crane picked them up and set them onto trucks for hauling to a storage area. The new elements were brought into the boiler in the reverse manner. A total of 540 reheater elements, arranged in six banks, or sections, were

removed and re-designed replacements were installed.

EPA Enforcement Ex. 279, at 17 (Hekking's pre-filed testimony). TVA replaced approximately 44% of the 234,219 square feet of total boiler surface in this project. TVA Ex. 4, at 31 (Golden's pre-filed testimony).

2. *Purpose*

The purpose of this project is described in TVA's work order, which cites the elimination of current failures and deratings resulting from slagging as among the purposes for this project. EPA Enforcement Ex. 51. TVA further explains the project in its records that the project would address tube failures at a reheater that was thirty years old in 1990 and thus approaching the end of its productive life. EPA Enforcement Ex. 53. Indeed, TVA's work order explains that the tube failures indicate "an end of life failure mode." EPA Enforcement Ex. 63. Thus, this project was intended to extend the life of the unit.

Moreover, the construction project was funded through the central office's capital budget.[144] As explained in some detail *supra* Part III.C of this decision, under TVA's capitalization policy, this classification shows TVA's intent to improve the unit, not merely to maintain it.

3. *Frequency*

The record indicates that this project was the only one of its kind in the unit's lifetime. EPA Enforcement

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[144] This fact is also significant in examining the cost element of the four-factor test.

Ex. 279, at 17 (Hekking's pre-filed testimony). TVA does not dispute this fact; however, it emphasizes that similar projects had occurred with some frequency within TVA and in the utility industry generally. *See* TVA Ex. 4, at 10 (Golden's pre-filed testimony). Specifically, TVA argues that repair or replacement of damaged reheater tubing either when it fails or prior to its failure was a "utility practice * * * in place long before the New Source Review regulations were contemplated. Since 1977, TVA has performed ninety-three reheater replacement projects (only forty-nine of TVA's fifty-nine units have reheaters)." *Id.* at 31. Moreover, TVA argues that when compared to the cost and time shutdown of the project under review in *WEPCO* (the *WEPCO* project), the Allen Unit 3 project is routine.

As we noted earlier in Part III.C.3 of this decision, we think the relevant inquiry regarding frequency focuses most importantly on the significance of the project in the life of the unit in question, and this evaluation can be informed by the frequency of the activity at other units within the industry. This point was emphasized by the *WEPCO* court when it stated that "the renovation work items * * * are those that would normally occur only once in a *unit's* expected life cycle." *WEPCO*, 893 F.2d at 912 (emphasis added). TVA's evidence does not establish that reheater replacements were routine within the life of a unit like Allen Unit 3. Rather, they are uncommon events in the life of such a unit. Moreover, we have previously rejected the notion that the mere fact that others in the industry have done this type of replacement makes it "routine." *See supra* Part III.C.3.

4. *Cost*

TVA's Fossil and Hydro Modifications Division at the central office performed this project at an approximate cost of $10.78 million.[145] Mr. Hekking testified that the project could not have been funded through the plant's O&M budget because the entire O&M budget for Allen's three units combined was less than the project's cost.[146] *See* Tr. at 245.

As discussed above, TVA argues, generally, that EPA Enforcement's comparison of the O&M budget of the plant to the cost of the project is misleading because the O&M budgets do not include the "entire spectrum of routine maintenance, repair and replacement." TVA asserts that, "yearly plant maintenance budgets are intended to cover day-to-day minor maintenance activities that the plant maintenance staff conducts, but they do not cover common maintenance, repair and replacement activity that TVA has found more cost-effective to centralize * * *." TVA Post-Hearing Brief at 34-35. This statement notwithstanding, we find the fact that the individual plant's O&M budget was less than the cost of many of these projects is quite relevant where it shows the extensive nature of the project in relation to daily and "running maintenance" handled by the plant's maintenance department.

On balance, we find that, considering the evidence in the record and applying the four factor test, TVA has

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[145] The parties have different cost figures for the project. However, both parties agree that the differences are not that great and are, therefore, not relevant. Tr. at 338-40. We will use EPA's figures, which were obtained from TVA records.

[146] Mr. Hekking estimated the O&M budget for the Allen plant in the early 1990s to be $9.5 million. Tr. at 245.

not established that its project at the Allen Plant Unit 3 comes within the scope of the routine maintenance exception. Notably, TVA cites to no applicability determination issued by EPA or the relevant state authority for this or a like project that would support a finding that this project constituted routine maintenance, repair and replacement.

B. *Paradise Plant Units 1, 2, and 3*

The Paradise plant is located in Drakesboro, Kentucky. Units 1 and 2 began commercial operations in 1963, and Unit 3 began in 1970. In 1985,[147] TVA performed a series of replacements at the Paradise plant's Units 1, 2, and 3. The significant facts from the record are highlighted below using the four factor test as a framework.

1. *Nature and Extent*

The work was essentially the same at all three units. It included the replacement of all cyclone burners attached to each boiler and the replacement of the lower furnace walls, floor and headers. EPA Enforcement Ex. 273; EPA Enforcement Ex. 279, at 40-42 (Hekking's pre-filed testimony); TVA Ex. 4, at 23-26 (Golden's pre-filed testimony).

Through these projects, TVA replaced all fourteen cyclone burners at each of Units 1 and 2 and replaced all twenty-three cyclone burners at Unit 3. In addition, TVA cut out and replaced the waterwall below 465 feet, including the lower headers and floor at Unit 1. TVA

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[147] The work at Unit 1 began in March of 1985; the work at Unit 2 began in November of 1985; and the work at Unit 3 began in October of 1984. *See* TVA Ex. 4, at 23-26 (Golden's pre-filed testimony).

performed the same work at Unit 2. At Unit 3, in addition to the twenty-three cyclones, TVA replaced the waterwalls between 418 feet to 501 feet. TVA Ex. 4, at 23-25 (Golden's pre-filed testimony); EPA Enforcement Ex. 279, at 42 (Hekking's pre-filed testimony).

The magnitude of the work at each of these units was significant. Indeed, TVA had to construct monorails at the front and rear walls for lifting and positioning the cyclones at each unit. EPA Enforcement Ex. 279, at 43 (Hekking's pre-filed testimony). TVA installed a trolley system to transport the cyclones in and out of the building, and TVA constructed rigging inside the furnace to assist in attaching the wall panels and floor panels. *Id.*

After approval from the Board of Directors and after years of planning, the central office's Fossil and Hydro Power Division performed work on these units sequentially.[148] TVA implemented the work at Unit 3 first, beginning in the Fall of 1984 and requiring the unit to be shut down for six months. It then worked on Unit 1, shutting it down for approximately 6.5 months beginning in March of 1985. Finally, TVA performed the work on Unit 2 beginning in November of 1985 and lasting 4.5 months. In each case, the units were shut down for periods well beyond the four weeks typical of scheduled maintenance outages.

The work at Unit 1 and 2 required the replacement of approximately 18.5% of the total tubing in the boiler.

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[148] A factual inconsistency exists between TVA and EPA Enforcement regarding the actual dates of each units' renovation. However, the length of time is substantially the same under either party's facts. *See* TVA Ex. 4 (Golden's pre-filed testimony); EPA Enforcement Ex. 279 (Hekking's pre-filed testimony).

TVA Ex. 4, at 23, 25 (Golden's pre-filed testimony). TVA replaced approximately 19.4% of the total tubing in Unit 3's boiler. *Id.* at 26.

2. *Purpose*

The central office's Fossil and Hydro Power Division recommended these projects at all three units in order to increase each unit's availability and reliability by decreasing the number of forced outages, as well as to extend the life of these units by twenty years. *See* EPA Enforcement Exs. 3, 4, 6, 9. Apparently, TVA had in the past repaired and replaced individual tubes in the waterwalls, floors and the cyclones, but the forced outages continued to increase. EPA Enforcement Ex. 279, at 40 (Hekking's pre-filed testimony); EPA Enforcement Ex. 16. Additionally, TVA classified these projects as capital projects and thus intended these projects to improve the units, not merely to maintain their present condition.

3. *Frequency*

The work performed on these units was the first and only of its magnitude at these units. EPA Enforcement Ex. 279, at 43 (Hekking's pre-filed testimony). TVA points out that cyclone replacements had been done within the industry and at TVA in the past. TVA Ex. 4, at 24 (Golden's pre-filed testimony). TVA's proof, however, falls short of suggesting that this work is common in the lives of individual units of this kind.

4. *Cost*

TVA's central office performed these projects at an approximate cost of $16.3 million for Unit 1,[149] $15.79 million for Unit 2, and $29.44 million for Unit 3. *See* EPA Enforcement Ex. 273. Additionally, given the size of the Paradise plant, it is probable that, similar to the Allen Plant, Paradise's O&M budget could not have supported such projects while meeting other maintenance needs.[150]

On the whole, TVA has not established that these projects fall within the "routine" exclusion when the four factor test is applied to the facts. Notably, TVA cites to no applicability determination issued by EPA or the relevant state authority for these or like projects that would support a finding that these projects constituted routine maintenance, repair and replacement.

C. *Bull Run Unit 1*

The Bull Run Plant is located in Anderson County, Tennessee and began operations in 1967. Unit 1 began to experience tube leaks in its economizer section that increased in frequency and duration. Additionally, there were tube leaks in the secondary superheater tubing, caused by deterioration of the tube material

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[149] At the hearing Mr. Majoros compared the cost of the project to the cost of the original installation of the unit in real dollars. The cost of the project was approximately a third of the original installation cost. *See* Tr. at 357-58.

[150] Although the only plant-specific O&M budget referenced in the record is for the Allen Plant in the early 1990s, we assume both that it is representative of O&M budgets for TVA plants of that size and a useful benchmark for estimating O&M budgets at other TVA plants. *See* Tr. at 245.

from twenty years of service. In applying the four factor test, we, based on our review of the record, find several facts significant to each factor.

1. *Nature and Extent*

The project, which required approval by TVA's Board of Directors and was managed by TVA's central office, required the removal and replacement of over sixty-seven miles of two-inch diameter tubing from the economizers in both furnaces at Unit 1. EPA Enforcement Ex. 279, at 21 (Hekking's pre-filed testimony). In replacing the secondary superheater in both furnaces, TVA removed and replaced over 58,000 feet of tubing. EPA Enforcement Ex. 73; EPA Enforcement Ex. 279, at 21 (Hekking's pre-filed testimony). Four separate sections of the unit were involved in this project—the economizer in the lower rear section of the furnace and the secondary superheater in the upper convection section, for each of the two furnaces. EPA Enforcement Ex. 279, at 21 (Hekking's pre-filed testimony). After years of planning, the project was completed in 1988. In order to implement the project the unit remained shut down for a three-month time frame, beyond the four weeks typical of scheduled maintenance outages. TVA replaced about 26.5% of the total tubing in the boiler. TVA Ex. 4, at 20, 22 (Golden's pre-filed testimony).

2. *Purpose*

TVA concluded that the leaks in the tubing would escalate if left unaddressed. EPA Enforcement Ex. 72. In 1986, the Fossil and Hydro Power Division recommended to TVA management the replacement of the economizer and the secondary superheater components of the unit to "reduce the number of forced outages,

increase the availability and reliability of the unit, and [to] extend the life of this section of the boiler by approximately 20 years." EPA Enforcement Ex. 72; *see also* EPA

Enforcement Exs. 73, 74. Like all projects at issue in this case, TVA classified this project as a capital project; thus, TVA intended the project to improve the condition of the unit, not merely restore and maintain it.

3. *Frequency*

This project was the only one of its kind in the unit's history. EPA Enforcement Ex. 279, at 20 (Hekking's pre-filed testimony). TVA raises very similar arguments for its defense of routine maintenance, repair and replacement at this unit as it did for the other projects. TVA placed into the record testimony regarding the frequency at which similar projects have occurred within TVA's plants and throughout the industry. Nowhere did it establish, however, that those replacements took place other than rarely in the lifetime of a unit like this one.

4. *Cost*

The total capital cost of the project (including replacement of both economizers and secondary superheaters) was approximately $8.3 million. EPA Enforcement Ex. 279, at 23 (Hekking's pre-filed testimony). Additionally, as discussed *supra* Part III.C of this decision, it is probable that Bull Run's O&M budget could not have supported such a project while meeting other maintenance needs.

Under the four-factor test, we look at more than just frequency of one-time facility events in the industry to

determine whether a project falls within the routine maintenance exception to the NSR regulations. Here, TVA did not establish that the Bull Run Plant Unit 1 project falls within the exception for "routine maintenance, repair and replacement." Notably, TVA cites to no applicability determination issued by EPA or the relevant state authority for this or a like project that would support a finding that this project constituted routine maintenance, repair and replacement.

D. *Colbert Plant Unit 5*

The Colbert Plant is located in Tuscumbia, Alabama. The plant began operating in 1965. In 1983, TVA undertook a major overhaul of Colbert Unit 5. The significant facts from the record are highlighted below using the four-factor test as a framework.

1. *Nature and Extent*

The project involved replacement of the waterwalls and horizontal reheater, modification of the startup system, modification of the superheater by adding wingwalls in the furnace, replacement of gas proportioning dampers, replacement of the windbox, redesigning and replacement of the control system, and addition of a balanced draft conversion system.[151] Indeed, as Mr. Golden testified, "[i]t was the largest unit rehabilitation project that TVA had ever undertaken." Tr. at 743. Although TVA completed the

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[151] EPA Enforcement notes that the conversion of the boiler to a balanced draft system, which uses negative pressure, represented a fundamental change in the boiler's control of the combustion process, whereas prior to the construction, the system used positive pressure. EPA Enforcement Ex. 279, at 26 (Hekking's prefiled testimony).

renovations in 1983, it began planning the project in the late 1970s. The central office planned and, after approval by the Board of Directors, performed the project during a thirteen-month shutdown, substantially beyond the four-week period typical of scheduled maintenance outages.

2. *Purpose*

The record reflects that TVA had determined that by changing from pressurized to balanced draft firing, it could significantly increase the unit's annual output, which would also reduce the number of forced outages and deratings resulting from the gas leakage from the unit. *See* EPA Enforcement Ex. 44; EPA Enforcement Ex. 279, at 26 (Hekking's pre-filed testimony). Further, the record establishes that the project was undertaken because of the boiler's deteriorated state and the control system's inadequacy. EPA Enforcement Ex. 36. TVA stated in its proposed project authorization:

> Attached is a proposed project authorization for $46,848,650 to rehabilitate and modify the Colbert unit 5 boiler, turbine, and control system. The outage rates on this unit continue to increase to intolerable levels because of the combined effect of several inadequate features associated with this prototype equipment. This work is expected to show a significant improvement in reliability and load-carrying capability and extend the useful life of the unit for 20 years.

EPA Enforcement Ex. 27. Further, TVA's classification of this project as a capital project shows that TVA intended to improve the condition of the unit, not merely maintain it.

3. *Frequency*

TVA implemented this project to fix a unit that was not working as designed. Accordingly, the project included modifications on a major scale and resulted in a fundamental change in the manner Unit 5 was operated. It thus seems self-evident that the project was extraordinary in nature and scope and was the kind of project that would only rarely be undertaken in the lives of most units of this kind. EPA Enforcement Ex. 279, at 27 (Hekking's pre-filed testimony).

4. *Cost*

TVA spent approximately $57.1 million on this construction project, which required over a year to complete. EPA Enforcement Ex. 204. As with the other projects, the funding for the project came from TVA's capital budget. The cost of the work—$57.1 million—certainly was substantial in absolute terms and required approval by TVA's Board of Directors. *See* EPA Enforcement Ex. 279, at 15 (Hekking's pre-filed testimony). Moreover, it is not difficult to conclude that Colbert's O&M budget could not have been adequate for the project, given its high costs.

In this instance, TVA argues that Unit 5 was a prototype and, therefore, subject to problems. *See* TVA Ex. 4, at 29 (Golden's pre-filed testimony). TVA argues that it is common in its industry for prototype units to require corrective action. Additionally, Mr. Golden testified that "it would have been unprecedented in the industry then, and in the industry now to walk away from a coal-fired plant that early in its

life."[152] *Id.* TVA points out that the unit was only seventeen years old when construction activities began. Additionally, TVA points out that each of the components replaced at Unit 5 have been replaced on a frequent basis within TVA.[153] TVA again concludes that the Colbert Unit 5 project was routine when compared to the *WEPCO* project, which extended the useful life of the units in question. Moreover, TVA argues that Colbert's cost in comparison to *WEPCO*'s was significantly less.[154]

Although TVA appears not to have implemented these projects at Unit 5 solely to extend the useful life of the seventeen-year-old unit, many other facts persuade us that the rehabilitation of Unit 5 was nonetheless not "routine maintenance, repair and replacement." The Board in particular finds the magnitude of the renovation, the length of time required to plan and implement the project, and the duration of the outage caused by the work at Unit 5 to be significant facts that cut against considering this construction work to be "routine." Indeed, it looks anything but routine. Moreover, since the project's purposes included increasing the unit's reliability, increasing its load-carrying capability by decreasing the number of outages ex-

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[152] Mr. Golden's testimony misses the point. NSR regulations would not prohibit the work TVA performed at Unit 5 but rather require TVA to obtain a permit before constructing.

[153] In Golden's pre-filed testimony, TVA does not address whether TVA or any-one in the industry had ever implemented a similar rehabilitation in the aggregate or how frequently any such replacement of individual components were in the life of the individual units.

[154] TVA cites comparison figures between Colbert Unit 5 and *WEPCO*'s projects as $103.85 per kilowatt ("kw") versus $220/kw, respectively.

perienced at the unit, and extending the life of the unit, this too shows the project was not routine and went beyond mere restoration of the unit to its former condition prior to the work. TVA's use of the capital budget for this project also reinforces the conclusion that TVA intended this work would leave the unit in an improved condition.[155] *See* EPA Enforcement Ex. 152.

On balance, although we recognize there are differences between this project and the others at issue in this case, TVA has not established that the work at Colbert Unit 5 to be "routine, maintenance, repair and replacement." Notably, TVA cites to no applicability determination issued by EPA or the relevant state authority for this or a like project that would support a finding that this project constituted routine maintenance, repair and replacement.

E. *Cumberland Plant Units 1 and 2*

The Cumberland Plant is located near Cumberland City, Tennessee. The units involved in this case, Units 1 and 2, began operating in 1973. This plant is the newest and largest plant in TVA's system. The record reveals several significant facts regarding these projects.

1. *Nature and Extent*

As detailed in TVA's scoping specification memo for the Cumberland plant, prior to the renovations both units were experiencing forced outages due to the need

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[155] The work TVA did at Unit 5 not only replaced components but improved the unit. Examples of these improvements to the unit include: the addition of wingwalls in the furnace, the redesign of the windbox to improve air distribution, and the conversion to a balanced draft system. *See* EPA Enforcement Ex. 22.

to repair secondary superheater tube leaks the unit had been experiencing. EPA Enforcement Ex. 111. In 1988, TVA's central office recommended the complete replacement of both secondary superheater outlet headers and 1,460 terminal tubes, asbestos insulation removal, insulation installation, and structural steel reinforcement for Unit 1. EPA Enforcement Ex. 81. In 1996, after TVA's Board of Directors approved the project, TVA's central office managed the work at Unit 1. EPA Enforcement Ex. 273.

Regarding Unit 2, in 1994, after TVA's Board of Directors approved the project, TVA's central office managed the replacement and redesign of the secondary superheater outlet headers, the replacement of the secondary superheater pendant elements and the replacement of the lower slope and lower waterwalls. *See* EPA Enforcement Exs. 103, 105, 273. The headers alone were over 110-feet long and "were massive pieces of metal with intricate machine work for the more than 700 tube stub holes, outlet steam piping, and other attachments," weighing over eighty tons each. EPA Enforcement Ex. 279, at 31-32 (Hekking's pre- filed testimony).

The projects at both units took three months to complete once on- site activity began and several years of planning[156] prior to implementation. Again, the three-month shutdown went well beyond the four weeks typical for scheduled maintenance outages. EPA Enforcement Ex. 273.

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[156] TVA took eight years to plan the project at Unit 1 and six years to plan the project at Unit 2. *See* EPA Enforcement Ex. 80.

2. *Purpose*

TVA explained that the work was required for Unit 1 because the secondary superheater headers had been prone to thermal fatigue cracking and this cracking decreased the unit's availability to generate power. *Id.* "In their present condition, these headers cannot be safely or reliably operated for more than 3 years." *Id.* Thus, the purpose of these projects was to eliminate forced outages, increase capacity at both units and extend the life of the unit. In addition, TVA replaced the secondary superheater pendant elements and replaced the lower slope and lower waterwalls at Unit 1. EPA Enforcement Ex. 279, at 31-32 (Hekking's pre-filed testimony); EPA Enforcement Ex. 273. TVA funded both projects as capital projects, intending both projects to improve, rather than simply maintain, each unit's condition.

3. *Frequency*

The two projects at Unit 1 and Unit 2, respectively, replaced at substantial cost a number of key boiler components that had never been replaced on either unit.

TVA contends that utilities commonly replace components that "pose a threat to employee safety or the unit's ability to reliably generate electricity." TVA Ex. 4, at 35 (Golden's pre-filed testimony). The fact that this may have been one of their purposes does not, by itself, determine the outcome of whether the work was "routine."[157] TVA does acknowledge that replace-

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[157] We do not doubt that components at older units may have safety and reliability issues, but in our view this does not alone establish whether or not the replacement was "routine."

ment of superheater headers is done less frequently, but states that "TVA has historically replaced headers when conditions justify such replacements." *Id.* TVA's evidence falls short of demonstrating that such replacements are anything other than uncommon events within the life of units like Cumberland Units 1 and 2.

4. *Cost*

The work performed at Unit 1 was in excess of $22 million, and TVA spent over $18 million on the project at Unit 2. It is probable that the O&M budget for this plant would not have been sufficient to finance these projects and meet other maintenance needs.

Based on the totality of the facts, the Board finds that TVA has not met its burden to establish that the projects at Unit 1 and 2, in 1996 and 1994, respectively, were "routine maintenance, repair and replacement." Notably, TVA cites to no applicability determination issued by EPA or the relevant state authority for these or like projects that would support a finding that these projects constituted routine maintenance, repair and replacement.

F. *John Sevier Plant Unit 3*

The John Sevier Plant is located in Hawkins County, Tennessee. Unit 3 at the plant began operations in 1956 and has a rated capacity of 135 MW. In the 1980s, Unit 3 began to experience problems in the waterwalls due to extensive tube failures, and TVA accordingly initiated work orders for the Unit 3 work in the mid-1980s. In reviewing the record, the Board found several facts significant in its application of the four factor test.

1. *Nature and Extent*

The central office's Fossil and Hydro Power Division recommended to its management that TVA replace the complete boiler set of superheater platen elements, replace eight burner tube panels in both furnaces, and replace all waterwall tubes in portions of the front, rear, and sidewalls. TVA's project included replacing the waterwall tubes on the rearwall from 1097 feet to 1164 feet; on the sidewalls and frontwall in both furnaces up to 1,197 feet.[158] EPA Enforcement Ex. 67. The boiler construction section at TVA's central office was responsible for the project's planning and implementation. After its Board of Directors approved the project and years of planning, TVA initiated on-site activities in 1986 and required the unit to shut down for 2.5 months in order to replace the waterwalls, beyond the four weeks typical of scheduled maintenance outages. The work performed at this unit replaced approximately 8% of the tubing in the entire boiler. TVA Ex. 4, at 12-14 (Golden's pre-filed testimony).

2. *Purpose*

TVA undertook this work in order to extend the life of the unit by approximately twenty years and to improve its reliability. *See* EPA Enforcement Exs. 65-

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[158] There is an apparent inconsistency in the record on these facts. In Golden's testimony, he states that sixty-seven feet of the rear waterwall was replaced and that 100 feet of the side and front waterwalls was replaced. *See* TVA Ex. 4 (Golden's pre-filed testimony). The inconsistency may be explained by TVA's separation of the project into several projects. *See id.* at 12-14. The Board will rely on TVA's work order as the accurate description of the project. *See* EPA Enforcement Ex. 67.

67. Indeed, TVA's classification of the project as a capital project shows TVA's intent to improve the unit, not merely to maintain it.

3. *Frequency*

This project was the first time in the unit's lifetime that these components had been replaced. TVA argues that the project constituted routine maintenance, repair and replacement because replacement of damaged waterwalls is common practice within the utility industry.[159] TVA Ex. 4, at 12 (Golden's pre-filed testimony). TVA's evidence falls short, however, of showing that such replacements are anything but rare in the life of a unit like Unit 3.

4. *Cost*

The project was classified as a capital project, costing TVA approximately $3.94 million to complete. EPA Enforcement Ex. 279, at 35 (Hekking's pre-filed testimony). Again, given the size of this plant and the cost of this project, it is probable that the O&M budget for the plant would not have been sufficient to finance this project while meeting other maintenance needs.

Based on these facts, the Board finds that TVA has not met its burden of establishing that the 1986 project

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[159] Further, Golden states, "A survey of maintenance practices of other coal- burning electric utility units, representing more than 20% of the total electricity generation capability in the United States, revealed that of a population sample of 219 utility boilers, 174 waterwall replacement projects had been performed since 1977." TVA Ex. 4, at 12 (Golden's pre-filed testimony). This testimony does not, however, establish that these replacements were common in the life of any particular unit, which, as noted above, is an important aspect of the analysis.

at the John Sevier Plant Unit 3, based on all the evidence in the record, constitutes "routine maintenance, repair and replacement." Notably, TVA cites to no applicability determination issued by EPA or the relevant state authority for this or a like project that would support a finding that this project constituted routine maintenance, repair and replacement.

G. *Kingston Plant Units 6 and 8*

The Kingston Fossil Plant is located in Roane County, Tennessee. The plant has nine generating units, two of which are at issue in the present matter—Units 6 and 8. Both units began operations in 1955. The renovations at issue involve the replacement of key components at Units 6 and 8 in the Spring and Fall of 1989, respectively.

1. *Nature and Extent*

After gaining TVA's Board of Directors approval, TVA's central office performed essentially the same work at both units. The work included replacing all reheater and superheater intermediate pendant elements and the lower waterwalls of the superheater and reheater furnaces. *See* EPA Enforcement Ex. 279, at 36-37 (Hekking's pre-filed testimony); TVA Ex. 4, at 15-19 (Golden's pre-filed testimony). TVA's central office began planning these projects in 1987 at the latest. *See* EPA Enforcement Exs. 122, 123, 126. TVA shut down Unit 6 for approximately two months to perform this project and shut down Unit 8 for a three-month period, *see* EPA Enforcement Ex. 273, thus going beyond the four weeks typical of scheduled maintenance outages.

The work on Unit 6 for the replacement of the reheater and superheater intermediate pendent ele-

ments involved replacement of 12,855 square feet of surface area, approximately 9% of the total superheater and reheat surface in the boiler. TVA Ex. 4, at 15 (Golden's pre-filed testimony). The work on the lower waterwalls at Unit 6 replaced approximately 5% of the 70,600 square feet of waterwall surface. *Id.* at 17. TVA's replacement of the superheater crossover tubes at Unit 6 represented less than 3% of the total amount of tubing in the unit. *Id.* at 18. And at Unit 8 the work involving the reheater and superheater required the replacement of approximately 9% of the total superheater and reheater surface at the unit. *Id.* at 19.

2. *Purpose*

TVA's records show that the purpose of these projects was to replace components that "have operated beyond their designed life and have deteriorated because of long-term overheating causing failure due to creep." EPA Enforcement Ex. 126. TVA justified the cost of these projects because the replacement would increase the reliability and availability of the units. *See* EPA Enforcement Exs. 122, 123, 126. In its 1986 work order for Unit 8's superheater replacement, TVA stated that the replacement of the superheater elements would "extend the life of this portion of the boiler by approximately 20 years." EPA Enforcement Ex. 126. Thus, TVA classified these projects as capital projects, which under TVA's own policy were intended to improve the condition of the units, not merely maintain them.

3. *Frequency*

The record indicates that these projects at Units 6 and 8 were the first replacements of this magnitude for these components, and TVA offered no evidence that

such replacements have since occurred at those units. TVA had performed smaller less-extensive replacements at these components in the past, but this does not diminish the significance of the projects under review.

TVA argues that these projects are routine because they are commonly done in TVA's system and the utility industry, generally. TVA Ex. 4, at 15-19 (Golden's pre-filed testimony). As we have said, the fact that others in the industry have done similar projects does not alone assist in determining whether the project falls within the routine maintenance exception. TVA's evidence does not demonstrate that such replacements are anything other than uncommon events within the life of units like Units 6 and 8.

4. *Cost*

TVA's Fossil and Hydro Modifications Division at the central office performed these projects at an approximate capital cost of $2.6 million for Unit 6 and $2.9 million for Unit 8. It is probable that the O&M funds available for these units would have been insufficient to finance this work while meeting other maintenance needs. Again, TVA compares the separate replacement costs at each of Units 6 and 8 with WEPCO's complete cost and claims that TVA's separate replacements were substantially less that the entire cost of WEPCO's modification. TVA Ex. 4, at 15-19 (Golden's pre-filed testimony). The determination that a project is non-routine does not require a mere cost comparison with *WEPCO;* rather, a case-by-case determination using the four-factor test is required.

After reviewing the record on these two units, the Board concludes that, based on the facts as a whole,

TVA has not met its burden of establishing that the projects performed at Units 6 and 8 were "routine." Notably, TVA cites to no applicability determination issued by EPA or the relevant state authority for these or like projects that would support a finding that these projects constituted routine maintenance, repair and replacement.

H. *Shawnee Plant Units 1 and 4*

The Shawnee Plant is located in McCracken County, Kentucky. In 1953, Units 1 and 4 began commercial operations. The projects involved in this matter were carried out in the Fall of 1989 and the Spring of 1990 at Units 1 and 4, respectively. The Board finds that following facts from the record to be significant.

1. *Nature and Extent*

TVA replaced the following items at each unit: "the secondary and reheat superheater pendant and cross-over elements including header stubs." EPA Enforcement Exs. 133, 136. The planning required several years to complete. *Id.* These projects were also approved by TVA's Board of Directors and were managed by TVA's central office. TVA funded these projects, like all others at issue, through the capital budget. During the actual implementation of the project at Unit 1, TVA shut down Unit 1 for three months. EPA Enforcement Ex. 134. TVA completed the work at Unit 4 in two months. EPA Enforcement Ex. 137. Both of these projects required a shutdown beyond that of the typical scheduled maintenance outage of four weeks. Additionally, these projects required the replacement of over 132,612 feet of tubing at each unit and represented approximately 37%

replacement of total tubing at each unit. TVA Ex. 4, at 32 and 33 (Golden's pre-filed testimony).

2. *Purpose*

The central office recommended the projects because inspections of these components had revealed that the tubing was badly deteriorated and that, if not replaced, the rate of tube failures would increase. Thus, these projects were implemented to reduce the number of forced outages at the unit and prevent the continuing increase of those outages. EPA Enforcement Exs. 133, 136. These projects also extended the life of the units. EPA Enforcement Ex. 279, at 46 (Hekking's pre-filed testimony). TVA's classification of the projects as capital projects, further reinforces that TVA intended these projects to improve the condition of the units, not only to maintain them.

3. *Frequency*

Similar projects had never been performed on these units in their thirty-six years of operation. EPA Enforcement Ex. 279, at 46 (Hekking's pre-filed testimony). Again, TVA argues that replacements of this kind were commonly performed at TVA and industry-wide. Thus, TVA concludes, the projects at Units 1 and 4 were routine. However, TVA has offered no evidence that similar improvements are anything other than rare in the life of units of this kind, a factor that we find more instructive.

4. *Cost*

TVA implemented these projects at an approximate capital cost of $4.5 million for Unit 1[160] and $5 million for Unit 4. *See* EPA Enforcement Ex. 279, at 46 (Hekking's pre-filed testimony); EPA Enforcement Ex. 273. Given the size of these units and the cost of these projects, it is probable that the plant's O&M budget would have been insufficient to finance these projects while meeting other maintenance needs.

Again, based on the facts in the record, the Board concludes that TVA has not met its burden to establish that the projects TVA undertook at the Shawnee Plant Units 1 and 4 projects were "routine." Notably, TVA cites to no applicability determination issued by EPA or the relevant state authority for these or like projects that would support a finding that these projects constituted routine maintenance, repair and replacement.

I. *Widows Creek Plant Unit 5*

TVA's Widows Creek Plant is located in Jackson County, Alabama. The plant began commercial operations in 1952. However, Unit 5 did not begin operating until 1954. The final project in this case involves a Fall 1989 scheduled outage at this unit.

1. *Nature and Extent*

TVA replaced all of the secondary superheater pendant elements, reheater elements, and crossover

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[160] Mr. Majoros compared the cost of the project at Unit 1 with the cost of the original installation of the unit in real dollars and found the project represented approximately 45% of the original installation cost. *See* Tr. at 362.

elements. Additionally, TVA redesigned the tubing to use better materials. *See* EPA Enforcement Ex. 279, at 47-50 (Hekking's pre-filed testimony); TVA Ex. 4, at 32 (Golden's pre-filed testimony); EPA Enforcement Ex. 46. TVA took several years to plan the project at Unit 5, and, after TVA's Board of Directors' approval, took approximately four months to complete the work, significantly longer than the four weeks required for typical schedule maintenance outages.[161] EPA Enforcement Exs. 46-47. The work, managed by TVA's central office, required replacement of approximately 43.5% of the total feet of tubing in the boiler. TVA Ex. 4, at 34 (Golden's pre-filed testimony).

2. *Purpose*

TVA's work order for Unit 5 indicates that the project would extend the life of the unit: "the existing tubes are failing because of creep damage experienced while operating at high-temperatures. This indicates that these tubes have reached the end of life." EPA Enforcement Ex. 46. As with all the other projects previously discussed, TVA classified this project as a capital project, thus intending the project to improve the condition of the unit, not merely to maintain it.

3. *Frequency*

The work was the first and only replacement of the components in the lifetime of the unit. TVA argues, as

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[161] Golden submitted testimony that TVA implemented the project in a little over two months (October 2, 1989 to December 18, 1989); however, TVA's own completion report for the project indicates that construction began in September 1989 and finished in January 1990. *See* TVA Ex. 4, at 34 (Golden's pre-filed testimony); EPA Enforcement Ex. 47.

it has regarding all of these projects, that the project at Unit 5 must be characterized as routine because many similar projects have been performed by TVA, as well as by others in the utility industry. For the reasons already discussed at length, we reject this argument again because it ignores other relevant facts that must be reviewed in determining whether a project falls within the routine maintenance repair and replacement exception. TVA has not, for example, offered any evidence that similar improvements have been made to this unit prior to the project or since or that such improvements are anything other than uncommon in the lives of units of this kind.

4. *Cost*

TVA performed this project at an approximate capital cost of $4.13 million. Given the cost associated with this project, it is probable that the O&M funds for this plant would not have been sufficient to finance this project while meeting other maintenance needs.

On the whole, TVA has not met its burden of establishing that this project was "routine maintenance, repair and replacement." Notably, TVA cites to no applicability determination issued by EPA or the relevant state authority for this or a like project that would support a finding that this project constituted routine maintenance, repair and replacement.

APPENDIX D

UNITED STATES COURT OF APPEALS
FOR THE ELEVENTH CIRCUIT

No. 00-15936

TENNESSEE VALLEY AUTHORITY, PETITIONER

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS

No. 00-16234

ALABAMA POWER COMPANY, PETITIONER

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS

No. 00-16235

TENNESSE VALLEY PUBLIC POWER ASSOCIATION, MEMPHIS LIGHT, GAS & WATER DIVISION ELECTRIC POWER BOARD OF CHATTANOOGA, MIDDLE TENNESSEE ELECTRIC MEMBERSHIP CORPORATION, VOLUNTEER ELECTRIC COOPERATIVE, PETITIONERS

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS

No. 00-16236

DUKE ENERGY CORPORATION, PETITIONER

v.

CHRISTINE TODD WHITMAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, RESPONDENTS

Petitions for Review of a Final Order of the United States Environmental Protection Agency

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[September 16, 2003]

ON PETITION(S) FOR REHEARING AND PETITION(S) FOR REHEARING EN BANC

Before: TJOFLAT, BARKETT and WILSON, Circuit Judges.

PER CURIAM:

The Petition(s) for Rehearing are DENIED and no member of this panel nor Judge in regular active service on the Court having requested that the Court be polled on rehearing en banc (Rule 35, Federal Rules of Appellate Procedure; Eleventh Circuit Rule 35-5), the Petition(s) for Rehearing En Banc are DENIED.

Entered For the Court:

UNITED STATES CIRCUIT JUDGE

APPENDIX E

U.S. Department of Justice
Office of the Associate Attorney General

Washington, D.C. 20530
May 4, 2000

cc: Leslie Batchelor
Michael Greenberge
Lois Schiffer
John Cruden
Randy Moss
Jeff Kehne
Seth Waxman
Tom Perrelli
Bill Marshall

Mr. Edward S. Christenbury
Senior Vice President and
General Counsel
Tennessee Valley Authority
400 W. Summit Hill Drive
Knoxville, TN 37902-1499

Dear Mr. Christenbury:

I am writing in reference to your dispute with the Environmental Protection Agency (EPA) concerning the application of certain Clean Air Act requirements to coal-fired electrical generating plants operated by the Tennessee Valley Authority (TVA). I understand that TVA intends to file a petition for review of the compliance order that EPA originally issued to TVA in early November 1999.

Although we are aware of a few lower court decisions that have upheld TVA's authority to litigate on its own behalf over the Department of Justice's objections, we continue to question TVA's authority to engage in any

litigation without the Attorney General's approval. *See* 28 U.S.C. sec. 515-516, 518. In any case, turning to the dispute at hand, we are convinced that TVA lacks authority to file suit against EPA. Disagreements between agencies whose heads serve at the pleasure of the President implicate the President's responsibility to oversee execution of the laws by the Executive Branch. Any attempt to resolve such disagreements through the courts raises serious separation of powers issues, as well as questions about the authority of the courts under Article III. Moreover, nothing in the federal statutes defining TVA's powers provides a clear grant of authority to sue another federal agency in these circumstances.

There are, in short, compelling legal as well as policy reason why the dispute between TVA and EPA must be resolved within the Executive Branch. To the extent that TVA may have been planning litigation against EPA based on a mistaken assumption that the Attorney General has tacitly authorized TVA to pursue such litigation, this letter will serve to clarify that there has been no such authorization and that TVA should not bring this lawsuit. The Department of Justice is prepared, in the event that TVA seeks judicial review of EPA's compliance order, to seek dismissal on the ground that TVA lacks authority to prosecute such an action, as well as on other appropriate grounds.

Sincerely,

Daniel Marcus
Acting Associate Attorney
General

APPENDIX F

1. Section 7413 of Title 42 of the United States Code provides, in relevant part:

§ 7413. Federal enforcement

(a) In general

(1) Order to comply with SIP

Whenever, on the basis of any information available to the Administrator, the Administrator finds that any person has violated or is in violation of any requirement or prohibition of an applicable implementation plan or permit, the Administrator shall notify the person and the State in which the plan applies of such finding. At any time after the expiration of 30 days following the date on which such notice of a violation is issued, the Administrator may, without regard to the period of violation (subject to section 2462 of Title 28)—

(A) issue an order requiring such person to comply with the requirements or prohibitions of such plan or permit,

(B) issue an administrative penalty order in accordance with subsection (d) of this section, or

(C) bring a civil action in accordance with subsection (b) of this section.

* * * * *

(3) EPA enforcement of other requirements

Except for a requirement or prohibition enforceable under the preceding provisions of this subsection, whenever, on the basis of any information available to the Administrator, the Administrator finds

that any person has violated, or is in violation of, any other requirement or prohibition of this subchapter, section 7603 of this title, subchapter IV-A, subchapter V, or subchapter VI of this chapter, including, but not limited to, a requirement or prohibition of any rule, plan, order, waiver, or permit promulgated, issued, or approved under those provisions or subchapters, or for the payment of any fee owed to the United States under this chapter (other than subchapter II of this chapter), the Administrator may—

(A) issue an administrative penalty order in accordance with subsection (d) of this section,

(B) issue an order requiring such person to comply with such requirement or prohibition,

(C) bring a civil action in accordance with subsection (b) of this section or section 7605 of this title, or

(D) request the Attorney General to commence a criminal action in accordance with subsection (c) of this section.

(4) Requirements for orders

An order issued under this subsection (other than an order relating to a violation of section 7412 of this title) shall not take effect until the person to whom it is issued has had an opportunity to confer with the Administrator concerning the alleged violation. A copy of any order issued under this subsection shall be sent to the State air pollution control agency of any State in which the violation occurs. Any order issued under this subsection shall state with reasonable specificity the nature of the violation and specify a time for compliance which the Admini-

strator determines is reasonable, taking into account the seriousness of the violation and any good faith efforts to comply with applicable requirements. In any case in which an order under this subsection (or notice to a violator under paragraph (1)) is issued to a corporation, a copy of such order (or notice) shall be issued to appropriate corporate officers. An order issued under this subsection shall require the person to whom it was issued to comply with the requirement as expeditiously as practicable, but in no event longer than one year after the date the order was issued, and shall be nonrenewable. No order issued under this subsection shall prevent the State or the Administrator from assessing any penalties nor otherwise affect or limit the State's or the United States authority to enforce under other provisions of this chapter, nor affect any person's obligations to comply with any section of this chapter or with a term or condition of any permit or applicable implementation plan promulgated or approved under this chapter.

(5) Failure to comply with new source requirements

Whenever, on the basis of any available information, the Administrator finds that a State is not acting in compliance with any requirement or prohibition of the chapter relating to the construction of new sources or the modification of existing sources, the Administrator may—

(A) issue an order prohibiting the construction or modification of any major stationary source in any area to which such requirement applies;[1]

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[1] So in original. The semicolon probably should be a comma.

(B) issue an administrative penalty order in accordance with subsection (d) of this section, or

(C) bring a civil action under subsection (b) of this section.

Nothing in this subsection shall preclude the United States from commencing a criminal action under subsection (c) of this section at any time for any such violation.

(b) Civil judicial enforcement

The Administrator shall, as appropriate, in the case of any person that is the owner or operator of an affected source, a major emitting facility, or a major stationary source, and may, in the case of any other person, commence a civil action for a permanent or temporary injunction, or to assess and recover a civil penalty of not more than $25,000 per day for each violation, or both, in any of the following instances:

(1) Whenever such person has violated, or is in violation of, any requirement or prohibition of an applicable implementation plan or permit. Such an action shall be commenced (A) during any period of federally assumed enforcement, or (B) more than 30 days following the date of the Administrator's notification under subsection (a)(1) of this section that such person has violated, or is in violation of, such requirement or prohibition.

(2) Whenever such person has violated, or is in violation of, any other requirement or prohibition of this subchapter, section 7603 of this title, subchapter IV-A, subchapter V, or subchapter VI of this chapter, including, but not limited to, a requirement or prohibition of any rule, order,

waiver or permit promulgated, issued, or approved under this chapter, or for the payment of any fee owed the United States under this chapter (other than subchapter II of this chapter).

(3) Whenever such person attempts to construct or modify a major stationary source in any area with respect to which a finding under subsection (a)(5) of this section has been made.

Any action under this subsection may be brought in the district court of the United States for the district in which the violation is alleged to have occurred, or is occurring, or in which the defendant resides, or where the defendant's principal place of business is located, and such court shall have jurisdiction to restrain such violation, to require compliance, to assess such civil penalty, to collect any fees owed the United States under this chapter (other than subchapter II of this chapter) and any noncompliance assessment and nonpayment penalty owed under section 7420 of this title, and to award any other appropriate relief. Notice of the commencement of such action shall be given to the appropriate State air pollution control agency. In the case of any action brought by the Administrator under this subsection, the court may award costs of litigation (including reasonable attorney and expert witness fees) to the party or parties against whom such action was brought if the court finds that such action was unreasonable.

(c) Criminal penalties

(1) Any person who knowingly violates any requirement or prohibition of an applicable implementation plan (during any period of federally assumed enforcement or more than 30 days after having been notified

under subsection (a)(1) of this section by the Administrator that such person is violating such requirement or prohibition), any order under subsection (a) of this section, requirement or prohibition of section 7411(e) of this title (relating to new source performance standards), section 7412 of this title, section 7414 of this title (relating to inspections, etc.), section 7429 of this title (relating to solid waste combustion), section 7475(a) of this title (relating to preconstruction requirements), an order under section 7477 of this title (relating to preconstruction requirements), an order under section 7603 of this title (relating to emergency orders), section 7661a(a) or 7661b(c) of this title (relating to permits), or any requirement or prohibition of subchapter IV-A of this chapter (relating to acid deposition control), or subchapter VI of this chapter (relating to stratospheric ozone control), including a requirement of any rule, order, waiver, or permit promulgated or approved under such sections or subchapters, and including any requirement for the payment of any fee owed the United States under this chapter (other than subchapter II of this chapter) shall, upon conviction, be punished by a fine pursuant to Title 18, or by imprisonment for not to exceed 5 years, or both. If a conviction of any person under this paragraph is for a violation committed after a first conviction of such person under this paragraph, the maximum punishment shall be doubled with respect to both the fine and imprisonment.

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(d) Administrative assessment of civil penalties

(1) The Administrator may issue an administrative order against any person assessing a civil administrative penalty of up to $25,000, per day of violation,

whenever, on the basis of any available information, the Administrator finds that such person—

(A) has violated or is violating any requirement or prohibition of an applicable implementation plan (such order shall be issued (i) during any period of federally assumed enforcement, or (ii) more than thirty days following the date of the Administrator's notification under subsection (a)(1) of this section of a finding that such person has violated or is violating such requirement or prohibition); or

(B) has violated or is violating any other requirement or prohibition of this subchapter or subchapter III, IV-A, V, or VI of this chapter, including, but not limited to, a requirement or prohibition of any rule, order, waiver, permit, or plan promulgated, issued, or approved under this chapter, or for the payment of any fee owed the United States under this chapter (other than subchapter II of this chapter); or

(C) attempts to construct or modify a major stationary source in any area with respect to which a finding under subsection (a)(5) of this section has been made.

The Administrator's authority under this paragraph shall be limited to matters where the total penalty sought does not exceed $200,000 and the first alleged date of violation occurred no more than 12 months prior to the initiation of the administrative action, except where the Administrator and the Attorney General jointly determine that a matter involving a larger penalty amount or longer period of violation is appropriate for administrative penalty action. Any such

determination by the Administrator and the Attorney General shall not be subject to judicial review.

(2)(A) An administrative penalty assessed under paragraph (1) shall be assessed by the Administrator by an order made after opportunity for a hearing on the record in accordance with sections 554 and 556 of Title 5. The Administrator shall issue reasonable rules for discovery and other procedures for hearings under this paragraph. Before issuing such an order, the Administrator shall give written notice to the person to be assessed an administrative penalty of the Administrator's proposal to issue such order and provide such person an opportunity to request such a hearing on the order, within 30 days of the date the notice is received by such person.

(B) The Administrator may compromise, modify, or remit, with or without conditions, any administrative penalty which may be imposed under this subsection.

(5) If any person fails to pay an assessment of a civil penalty or fails to comply with an administrative penalty order—

(A) after the order or assessment has become final, or

(B) after a court in an action brought under paragraph (4) has entered a final judgment in favor of the Administrator,

the Administrator shall request the Attorney General to bring a civil action in an appropriate district court to enforce the order or to recover the amount ordered or assessed (plus interest at rates established pursuant to section 6621(a)(2) of Title 26 from the date of the final order or decision or the date of the final judgment, as the case may be). In such an action, the validity,

amount, and appropriateness of such order or assessment shall not be subject to review. Any person who fails to pay on a timely basis a civil penalty ordered or assessed under this section shall be required to pay, in addition to such penalty and interest, the United States enforcement expenses, including but not limited to attorneys fees and costs incurred by the United States for collection proceedings and a quarterly nonpayment penalty for each quarter during which such failure to pay persists. Such nonpayment penalty shall be 10 percent of the aggregate amount of such person's outstanding penalties and nonpayment penalties accrued as of the beginning of such quarter.

(e) Penalty assessment criteria

(1) In determining the amount of any penalty to be assessed under this section or section 7604(a) of this title, the Administrator or the court, as appropriate, shall take into consideration (in addition to such other factors as justice may require) the size of the business, the economic impact of the penalty on the business, the violator's full compliance history and good faith efforts to comply, the duration of the violation as established by any credible evidence (including evidence other than the applicable test method), payment by the violator of penalties previously assessed for the same violation, the economic benefit of noncompliance, and the seriousness of the violation. The court shall not assess penalties for noncompliance with administrative subpoenas under section 7607(a) of this title, or actions under section 7414 of this title, where the violator had sufficient cause to violate or fail or refuse to comply with such subpoena or action.

(2) A penalty may be assessed for each day of violation. For purposes of determining the number of days

of violation for which a penalty may be assessed under subsection (b) or (d)(1) of this section, or section 7604(a) of this title, or an assessment may be made under section 7420 of this title, where the Administrator or an air pollution control agency has notified the source of the violation, and the plaintiff makes a prima facie showing that the conduct or events giving rise to the violation are likely to have continued or recurred past the date of notice, the days of violation shall be presumed to include the date of such notice and each and every day thereafter until the violator establishes that continuous compliance has been achieved, except to the extent that the violator can prove by a preponderance of the evidence that there were intervening days during which no violation occurred or that the violation was not continuing in nature.

2. Section 7477 of Title 42 of the United States Code provides:

§ 7477 Enforcement

The Administrator shall, and a State may, take such measures, including issuance of an order, or seeking injunctive relief, as necessary to prevent the construction or modification of a major emitting facility which does no conform to the requirements of this part, or which is proposed to be constructed in any area designated pursuant to section 7407(d) of this title as attainment or unclassifiable and which is not subject to an implementation plan which meets the requirements of this part.

3. Section 7607(b) of Title 42 of the United States Code provides, in relevant part:

§ 7607. Administrative proceedings and judicial review

* * * * *

(b) Judicial review

(1) * * * A petition for review of the Administrator's action in approving or promulgating any implementation plan under section 7410 of this title or section 7411(d) of this title, any order under section 7411(j) of this title, under section 7412 of this title,[2] under section 7419 of this title, or under section 7420 of this title, or his action under section 1857c-10(c)(2)(A), (B), or (C) of this title (as in effect before August 7, 1977) or under regulations thereunder, or revising regulations for enhanced monitoring and compliance certification programs under section 7414(a)(3) of this title, or any other final action of the Administrator under this chapter (including any denial or disapproval by the Administrator under subchapter I of this chapter) which is locally or regionally applicable may be filed only in the United States Court of Appeals for the appropriate circuit. Notwithstanding the preceding sentence a petition for review of any action referred to in such sentence may be filed only in the United States Court of Appeals for the District of Columbia if such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination. Any petition for review under this subsection shall be filed within sixty days from the date

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[2] So in original.

notice of such promulgation, approval, or action appears in the Federal Register, except that if such petition is based solely on grounds arising after such sixtieth day, then any petition for review under this subsection shall be filed within sixty days after such grounds arise. The filing of a petition for reconsideration by the Administrator of any otherwise final rule or action shall not affect the finality of such rule or action for purposes of judicial review nor extend the time within which a petition for judicial review of such rule or action under this section may be filed, and shall not postpone the effectiveness of such rule or action.

(2) Action of the Administrator with respect to which review could have been obtained under paragraph (1) shall not be subject to judicial review in civil or criminal proceedings for enforcement. Where a final decision by the Administrator defers performance of any nondiscretionary statutory action to a later time, any person may challenge the deferral pursuant to paragraph (1).